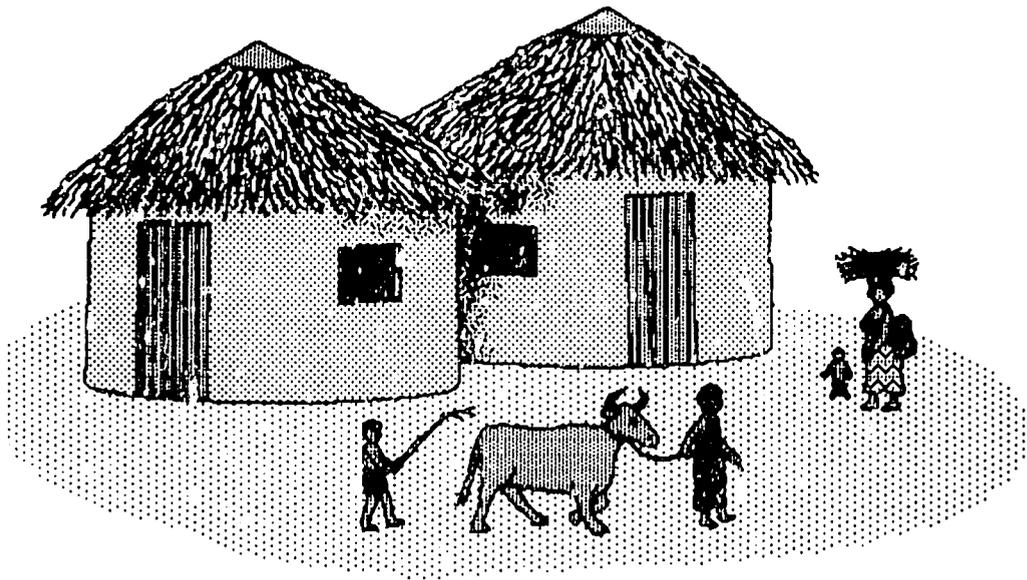


**UNIVERSITY OF SWAZILAND
SOCIAL SCIENCE RESEARCH UNIT**

**Development of Appropriate Methods
for Sustaining Rural Health Motivators
An Operations Research Approach**

Catherine Connolly and Laurie H. Dunn,
with Bertha Dlamini Vilakati



Research Paper No. 20
March, 1986

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MARCH, 1986

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1. EXECUTIVE SUMMARY

The Rural Health Motivator (RHM) is a key element in bringing primary health care (PHC) to rural people in Swaziland. In the past, they have not received their monthly government stipend for up to six months, which has had a totally demoralizing effect on their work. The operational objective of the Swaziland PRICOR study was to identify the most appropriate ways of sustaining the RHM that would be dependable and promote community involvement in the PHC program.

The problem of sustaining the RHM was identified as having the following components:

- need for community participation
- need for a strong supervisory system
- need for dependable compensation

The question of compensation took precedence over supervision and training issues because it represented a gap in the overall efforts to implement the five year plan for strengthening the RHM program.

The original objective of the study was modified after it was determined that the skills of the RHM would have to be strengthened before communities would value the services enough to pay for them. The first objective was then to define a set of skills within the capabilities of the RHM that were acceptable to the Ministry of Health (MOH) and that the community would be prepared to compensate the RHM for performing. The second objective was to develop an appropriate compensation scheme.

Several Operations Research (OR) techniques were used in the problem analysis phase. A simple oval diagram was used to describe the macro model of the PHC system. Then system definition diagrams were used to graphically represent the district medical and public health services and community support sub-systems. A crude system

definition diagram was also developed to identify constraints, inputs, processes, outputs, and outcomes. These models led to a refinement of the objective.

The solution development phase was characterized by the use of nominal group techniques and interactional matrices. A nationwide survey was used to elicit needed information which was unattainable in the literature. The survey focussed on four areas:

1. utilization patterns of health care
2. health expenditure
3. willingness of communities to support RHMs
4. attitudes of RHMs

This solution development phase survey revealed that 28% (n = 572) of the people surveyed indicated that they would be willing to support the RHM financially, while 64% said that they would be willing to contribute in-kind. The only factor found to be associated with willingness to support was geographic area.

A disturbing finding of this survey was that not one of the 31 RHM's interviewed felt the community would be willing to support them financially, mainly because they were already receiving a salary from the government. However, 50% of the RHMs felt communities would be willing to give them in-kind support.

The survey also provided information in the types of activities conducted by RHMs during homestead visits. Sixty-eight percent of all RHM activities cited by respondents related to environmental sanitation. Other preventive activities, such as nutrition and immunizations, accounted for 19%, while 13% of the activities were related to curative or referral services. Among the RHMs, 85% said people came to them for assistance, usually first aid or curative services.

Interactional matrices were used to determine what current or potential RHM activities should be strengthened. In addition, these matrices provided the rationale and design for the field test phase of the project.

The matrix results, in combination with discussions with MOH officials determined that the PHC skills of immunizations, oral rehydration therapy (ORT) and the introduction of growth monitoring should be emphasized. A matrix was again used to address the issue of support. Prepayment for services was determined to be most appropriate form of compensation for the Swaziland RHMs. The specific form of prepayment was not specified; rather, it was decided that the results of the field test might indicate the most appropriate method.

The non-experimental field test was conducted in a single cheiftaincy for a duration of 6.5 months. The criteria for selection included the existence of a local health committee, and a traditional community leader, local clinic nurse and district Nurse Supervisor who were supportive of the project goals.

The field test was initiated through a series of meetings with traditional community leaders, a general community meeting and a two day training course for the 8 RHMs. Monitoring consisted of a monthly meeting with the RHMs and periodic meetings with the traditional community leaders. Evaluation of the field test was accomplished using a survey of the study community and interviews with RHMs and community leaders.

The field test evaluation survey revealed that the PHC skills training for the RHMs had served to broaden the community's perception of the role of the RHM in relation to children's health. It was found that the RHM was perceived to be the primary source of information on ORT by respondents. In addition, mothers complied well when their child was referred by the RHM for immunization.

The newly introduced growth monitoring skills were well received by the community and the RHMs. Seven of the eight RHMs were found to be proficient at performing growth monitoring on the homesteads. The evaluation survey revealed that they were quite active within the community at performing this skill.

The RHM support scheme chosen by the community involved the donation of communal land and agricultural labor towards the production of a crop to be given to the RHMs. The community indicated that the RHMs could then sell the crop, and thus receive an indirect form of financial support.

This plan did not reach fruition during the course of the field test. The land was designated, but it was prepared too late in the growing season to allow for a reasonable chance of success. Community organization is such that the traditional community leader has the sole power and responsibility within the community to call on the people to perform civic duties such as the agricultural labor involved in the RHM support scheme. The traditional community leader in the field test area was physically absent during the period in which the field was to be prepared. Thus, the availability of this key individual can be the pivotal variable to such projects.

Recommendations to the MOH arising from this study include the following:

1. RHMs should be trained to perform growth monitoring on a homestead level. This should be accomplished by:
 - a. Development of a curriculum to introduce the theory and practice of growth monitoring to RHMs. Locally produced materials available in English should be translated into SiSwati for this purpose.

- b. Considering ways to make RHM spouses more aware and supportive of the RHM activities, in an effort to improve job satisfaction. The PHU could accomplish this by including the spouses in graduation and in-service sessions, as well as any community meetings which deal with the RHM.

- c. Increasing efforts to inform the traditional leadership of, and to involve them in, PHU and RHM activities in their communities. The traditional community leader must play a pivotal role in any community based effort to sustain the RHMs. Not merely their approval but their active participation is prerequisite to any proposed RHM support scheme. This participation could best be obtained by holding seminars for traditional community leaders and their deputies. The purpose of these seminars should be to sensitize them to the contributions the RHM makes to the community, her role in the delivery of primary health care and the need for community involvement to facilitate that role. Only after such seminars have been held should further efforts to establish community based support schemes be pursued.

2. BACKGROUND

The Kingdom of Swaziland is a small, land-locked country bordered on three sides by the Republic of South Africa and on the fourth side by Mozambique. In addition to being one of the smallest countries in Africa, it has a small population, 494,396 in 1976. But this population is growing at a rate of 3.4% per annum one of the highest rates in Africa and by the year 2000 it will have doubled. In 1983, it was estimated at 646,010. While the urban population is growing at a faster rate than the rural one due to internal migration, a majority of the people still live in rural areas (85%). Only six population centers of over 2,000 people existed in 1975. Villages or groups of houses clustered around a water source or school, etc. are rare. Rural people tend to live in individual family homesteads which are widely scattered and can be quite far from health facilities or public transport. Locating health facilities so as to serve the greatest number of people has been a persistent problem for the Ministry of Health (MOH). Because of this lack of population centers, no matter where clinics are placed, people must travel long distances, often on foot, to get health care. This is a particular hardship on women who have to physically carry a baby on their backs and lead another one or two by the hand all the way to the clinic. Fifty percent of the Swazi population is less than 15 and the fertility rate is 6.9 so it is very common to see women with several young children. Because of these difficulties, there is little motivation to visit the clinic for preventive care which does not have the same priority as curative care. The target population of this study was the rural population, mainly women and children who because of the geographic pattern of living have less access to primary health care than people in more urban areas.

The health problems of Swaziland are similar to those of many other African countries. According to the 1982 Annual Report of the MOH (1), the leading causes of morbidity and mortality were (based on inpatient data):

1. Gastro-enteritis
2. Injuries
3. Obstetrical complications
4. Respiratory illness
5. Tuberculosis

In addition to diagnoses reported by clinics and hospitals, an assessment of health problems must also include areas identified by the MOH, local community leaders and community members. These priorities often determine the success or failure of a project.

The MOH has identified the following as priority health problems (2):

- an infant mortality rate of 156/1000
- 60% of children who die under the age of 14 due to poor environmental sanitation and unclean water
- diarrheal disease as the leading cause of death in children less than 14
- many other deaths i.e. TB, measles that could be prevented by immunization.

On the basis of the above needs assessment, the MOH set two objectives in its most recent five year plan (3):

1. to reduce infant and child mortality and morbidity with special emphasis on diarrheal diseases, malnutrition and diseases preventable by immunization
2. to provide services which contribute towards an increase in child spacing and moderation in rate of population growth.

Health problems identified by local community leaders in a recent survey (4):

1. Lack of safe drinking water
2. Lack of a clinic
3. Lack of transportation or access to a clinic
4. Cholera and diarrheal disease
5. Coughing and tuberculosis.

In the same survey, health problems identified by heads of homesteads were:

1. Stomach ache
2. Colds, flue, sore throat and malaria
3. Headache
4. Dirty water or lack of water
5. Lack of latrines.

The health care system consists of five hospitals and public health centers and 35 rural clinics. All facilities offer curative services. Health centers and clinics offer preventive services as well, i.e. MCH and family planning. The rural health nurse is the main provider of primary health care in the rural area. She is assisted by mobile teams of nurses who conduct monthly mobile clinics; Health Assistants who concentrate on environmental sanitation and meat inspection and the Rural Health Motivator (RHM). RHMs are community health workers responsible for motivating teaching and referring communities in the following areas:

- A. Sanitation: by motivating and teaching families about the importance of latrines and then referring motivated clients to Health Assistants for assistance.
- B. Maternal and Child Health: They identify clients such as pregnant mothers and children, motivate them on the utilization of health services as well as immunization against the common preventable diseases and nutritional problems. They also help clients by advising them on family planning.

- C. Coordination: They form a coordinating link with other agencies such as agriculture by motivating families to utilize poultry schemes, fisheries and improved agricultural methods, as well as home economics activities and other developmental agencies.
- D. First Aid: They also provide first aid and assist in emergency home deliveries.
- E. ORT and Contraception: Their duties have recently been expanded to include dispensing oral rehydration salts on a recurring basis as well as condoms and foams. (A detailed job description is in Appendix 1).

The RHM is selected by the community according to the following criteria (5):

- a. persons of either sex 25-45 years
- b. married
- c. respected by the community
- d. responsible for his/her own work
- e. literate enough to fill out monthly reports
- f. able to communicate easily with other community workers
- g. has a knowledge of common health problems facing the community.

After selection they undergo a 12 week training course conducted by the Ministry in the rural area. The course covers a broad spectrum of public health and first aid:

Health education	6 days
MCH/FP/home delivery	13 days
nutrition/home economics/agriculture	8 days
first aid	5 days
environmental sanitation	4 days
communicable diseases	7 days
mental health and illness	2 days
adult literacy	1 day
community development/women in development	1 day
administrative matters and testing	3 days
return of RHMs to catchment areas	4 days
	<u>55 days</u>
	(11 wks)

An additional week has been added because the original schedule was found to be too short. During the training the RHMs live at the training site.

After training the RHMs return to their original areas. They are given a kit containing bandages for wounds, wound medicine, burn medicine, anti-malaria tablets, pain killers, ORS, arm bands for measuring malnutrition, measuring tapes for latrines and statistical forms. Some have received maternity kits for home delivery.

The RHMs are assigned 30-40 homesteads to visit. Sometimes this is done formally by the chief; other times informally among the RHMs themselves. Ideally each homestead should be visited once a month. The work is considered part-time, approximately $2\frac{1}{2}$ days per week (10 days per month). RHMs should visit three or four homesteads per day. The RHM receives E20/month from the government. This is not regarded as wages but a stipend to assist them in their work. These workers are regarded as volunteers by the government.

3. STUDY PURPOSE

The operational problem examined was how to sustain the Rural Health Motivators. An evaluation of the RHM program done in 1981 (6) found that the program had had a minimal impact on the construction of pit latrines, protected springs, and knowledge of health was not influenced by RHMs. In a subsequent survey in 1982, Green (7) found that RHMs had had no effect on respondents boiling of drinking water, environmental knowledge behavior questions. He did suggest that there was a slight impact compared to the earlier evaluation but that it was still not significant.

Based on the first evaluation, Thompson (8) identified two major problems:

- lack of community participation and support
- lack of a strong supervisory system

Recommendations were made and accepted by the Ministry to deal with these issues. The question of compensation was not focussed on because government anticipated no difficulty in supporting the RHMs and felt that communities could not afford to subsidize the RHMs. It was sufficient that communities were motivated to accept the program without having to assume another financial burden before seeing results. There has been more concern expressed recently on the issue of compensation. RHMs have received no increase since the start of the program in 1976 and 82.5% of the RHMs felt that the present stipend was not enough. So while there has been concern about community financing, no plan has been offered. While the government seems committed to minimal support, there is little likelihood of an increase. During the last six months of 1983, there was a complete breakdown of the payment system. This had a totally demoralizing effect on many of the RHMs. Although this financial breakdown was due to a technicality that was eventually resolved, it showed how tenuous the funding of the program was and how important financial support is to its success.

The objectives of the original study were to develop the most appropriate way of sustaining the RHM in their current activities. In the course of the study, we found that the skills of the RHM would have to be strengthened before communities would value the services enough to pay for them. So the final objective was first to define a set of skills within the capabilities of the RHM that were acceptable to the MOH and that the community would be prepared to compensate the RHM for. Second to develop an appropriate compensation scheme.

4. METHODOLOGY

4.1 Problem Analysis

The original operational problem was suggested by the MOH. Partially in response to the crisis in payment of the RHM that existed at the time the study was being developed but also because it complemented work being done by other groups.

Much work is already being done in an effort to sustain the RHMs. Health committees are being set up at each clinic to assist in its operation; seminars are being held for chiefs and traditional healers to inform and involve them more closely in health matters; funds are being established to build clinics and water systems. In fact, a great deal of effort is already going into mobilizing the community to take greater responsibility for their local health needs. In the RHM program, it is taking the form of community input in the selection, training and role identification of the RHMs. Community leaders have also been encouraged to start thinking of ways to support the work of the RHM, both formal compensation and informal assistance in problem solving.

The issue of supervision has also been recognized by the Ministry and a new cadre of Nursing Supervisors has been appointed in an attempt to decentralize health care administration and improve primary health care. One of the duties of the Nursing Supervisor is to oversee the work of the RHM.

The training curriculum was also recently revised, in 1981, to make the RHM more responsive to the communities' needs. The training was increased by several weeks and RHMs were allowed to dispense cough mixtures, ORS, non-medical contraceptives and perform emergency home deliveries.

The reason the question of compensation took precedence in this study was due to the existing crisis and it represented a gap in overall efforts to implement the five year plan for strengthening the RHM program. It also represented a specific task that the communities could become involved in that might generate further interest in the other

activities of the RHMs, in supervision of those activities to ensure maximum benefit and in improving the overall level of primary health care in the area.

In the process of analyzing the problem, the first step was building a model of the primary health care (PHC) system and then examining the various relevant subsystems. A simple oval diagram was used to describe the macro model of a primary health care system and two subsystems. These diagrams showed the structure of the PHC system; the components of the system, the areas of responsibility and their inter-relationships. A crude system definition diagram was also developed to identify constraints, inputs, processes, outputs and outcomes. This led to a refinement in the objective. At this time we were still only looking at ways of sustaining the RHM. We felt that any scheme would have to take into account the following:

- the expectations and role of the community
- the expectations and role of the RHM
- the sustainability of the system
- the nature of community involvement
- the encouragement of both curative and preventive services to meet the needs of the community as defined by the community and health professionals.

4.2 Solution Development

The first step in the phase of solution development was the identification of constraints and decision variables. The basic constraints were identified from the system definition diagram and were expanded from our review of the literature, see Appendix 2. In addition to the literature, nominal group methods were relied on to elicit opinions and ideas on types of support systems for the RHM and decision variables related to them.

The initial list of constraints was extensive so in order to exclude those not relevant to the project a matrix was used matching each constraint with the objectives of the study.

Again nominal group methods were relied on to identify decision variables:

1. the type of support system, i.e. cash, in-kind or labor or combination.
2. modification to the duties of the RHM to make them more effective (added at a later stage)

Once we determined what data was needed, we again used matrices to determine the best source of the information: from literature or surveys. Data not available from the literature was collected through surveys of rural homesteads and health workers. The survey focusses on four areas:

1. utilization patterns of health care
2. health expenditure
3. willingness of communities to support RHMs
4. attitudes of RHMs

Five hundred and seventy-two randomly selected homesteads were contacted in 14 different chiefs' areas covering four administrative districts during September and October 1984. In addition 31 RHMs were interviewed from eleven different chiefs' areas. The survey data was analyzed using standard statistical techniques in order to fill the information gaps identified in the matrix.

Nominal group methods were used to gather information from MOH personnel on types of support systems and modifications to the duties of the RHM. This information was categorized using matrices and scored and the methods were ranked and rated according to different constraints. Many solutions were eliminated because one group or another vetoed them unconditionally. The best solutions will be presented to the community selected for the field test. Again a nominal group technique will be used at a meeting of a community or just community leaders to make the final decision of which alternative is the most appropriate for that area.

Only a crude sensitivity analysis was used to determine the prepayment fee to be included in the alternative suggesting cost contribution. Comparisons were made with minimum wage scales and other income generating activities in the rural areas to determine the amount of supplemental income needed. We also examined other community funds collected in the rural areas to determine what homesteads are currently paying. We arrived at a compromise between what the RHMs desired and what communities might be expected to contribute.

4.3 Solution Validation

A six month field test was performed to validate the solutions arrived at during the second phase. These solutions purposed to reinforce three of the RHMs' PHC skills and to present several alternative prepayment schemes to the community for sustaining the RHM. The final choice of method for sustaining the RHM was to be left to the community in which the field test was being conducted.

A non-experimental study design was used in order to determine if the solutions reached would be workable given certain conditions. These conditions were determined from the research as being necessary before the question of community support could be considered. Communities in Swaziland differ widely in their level of community organization and in their willingness to undertake community self-help schemes. Local nurses also differ in their enthusiasm and interest for the RHM program. The field test area was selected to maximize the possibility of success and to demonstrate that while all communities cannot undertake such schemes at present, success could be possible under specific conditions.

Implementation of the field test was accomplished by a series of meetings with the traditional community leader, in this case the interim chief (Indyuna) and his council of elders, and a general community meeting where the project and its objectives were introduced. The reinforcement of PHC skills was accomplished by holding a two day refresher course for the eight RHMs in the field test community. Immunization and oral rehydration therapy information was reviewed and the theory and practice of growth monitoring was introduced. At the end

of the session, the RHMs were issued portable hanging scales and asked to perform growth monitoring for children under 2 years old on the homesteads.

Once the field test was in place it was monitored by monthly meetings with the RHMs and periodic discussions with the community leaders and the local clinic nurse. Visits were made to homesteads with each RHM to assess the level of competence with which they performed the task of growth monitoring.

The evaluation of the field test was performed using a random sample from each RHM area (in view to the RHMs area heterogeneity) and interviews with the RHMs and traditional leaders. The survey data was analyzed using standard statistical techniques.

4.4 Time Table

Original Tasks	original time schedule	actual time schedule
Preparation	2 weeks	4 weeks
Phase I		
Review of Literature	4 weeks	4 weeks
Instrument development and pre test	4 weeks	12 weeks**
Schedule and conduct meetings of survey design	2 weeks	3 weeks
Data collection	12 weeks	8 weeks
Data analysis	5 weeks	20 weeks***
Reports and meetings with various study groups	3 weeks	2 weeks

Continued:

Phase II

Identity solutions	2 weeks	2 weeks
Identify and collect additional data	2 weeks	--
Finalize alternative solutions	4 weeks	5 weeks
Conduct community meetings	8 weeks	--
Assessment and Evaluation findings	2 weeks	3 weeks
Conduct meetings with decision makers	1 week	2 weeks

Phase III

Field test	9 months	7 months****
Evaluation	2 weeks	3 weeks
Final Report	9 weeks	9 weeks

* Delay due to change in one of the co-principal investigators.

** Delays due to disruptions at the University.

*** Delay due to change in one of the co-principal investigators. A 2 month no-cost time extension was granted.

5. RESULTS

5.1. Problem Analysis

Diagram 1 shows a macro model of a primary health care system. As seen in the diagram, the RHM is responsible to both the modern and traditional sector of government and within the modern or ministerial system to both the curative (district medical services) and preventive sectors (district public health services). The RHM is therefore an outreach worker who can be called on by the community or the Ministry to do health related jobs requiring visits to homesteads or organizing community action. Their success depends on the support and contact they have with the two sectors of government.

Diagram 2 and Diagram 3 look at these two subsystems, the ministerial and community, in relation to the RHM program. The Public Health Units have the major responsibility and their links with the RHM are also the strongest. They are responsible for:

- overall administration of the project
- selection of new areas
- conducting training courses
- payment
- collecting and reviewing statistics forms
- sometimes distributing drugs, etc.
- minimal supervision
- in-service training
- problem solving.

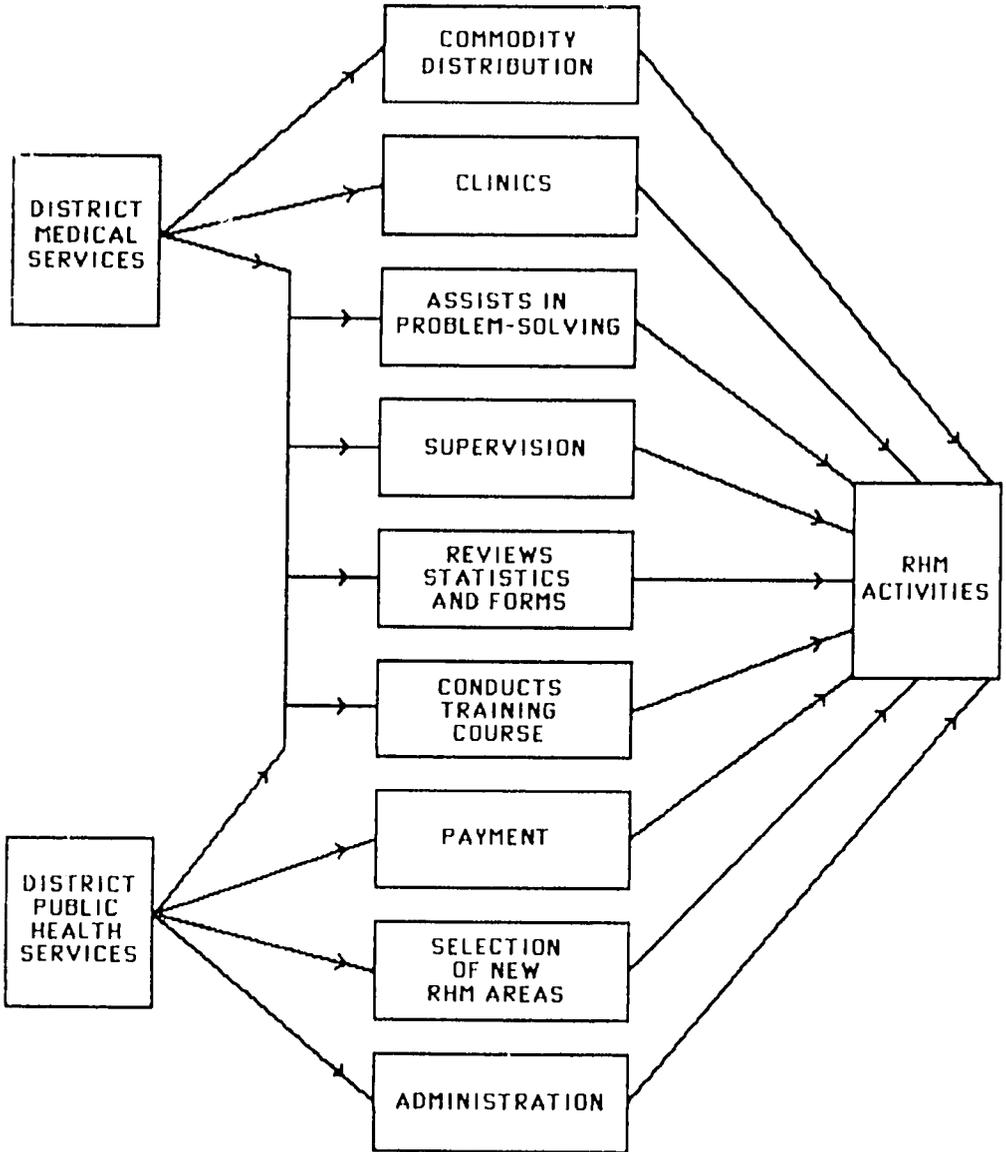
The local clinic is responsible for:

- sometimes distributing drugs, etc.
- sometimes giving in-service training.

One of the clear problems in the system is the weak link between the local clinic nurse and the RHM. The demands on the clinic nurse for both preventive and curative services prevent her from devoting time to the RHM program. This area will be discussed in more detail under solution development because it is an obvious constraint in the system.

Diagram 2

1 DISTRICT MEDICAL AND PUBLIC HEALTH SERVICES SUB-SYSTEM MODEL



2 COMMUNITY SUPPORT SUB-SYSTEM MODEL

Diagram 3

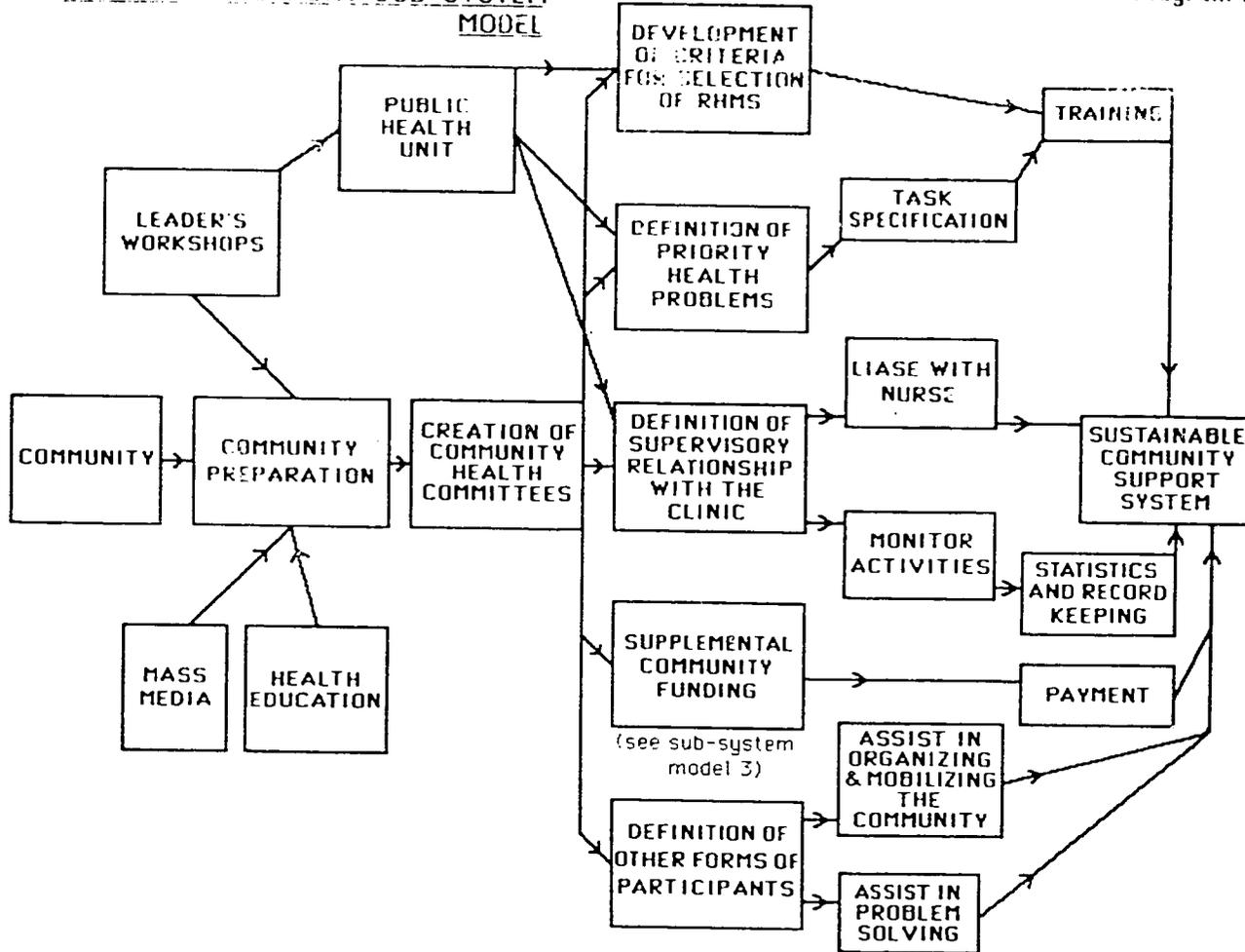


Diagram 3 describes the communities relationship to the RHM program. It is important to emphasize again that communities don't exist in Swaziland as in other countries. Community organizations and self- help schemes are very recent innovations and have had varying degrees of success. They have generally focussed on construction projects such as building schools, sheds, clinics, water systems or markets. Establishing community responsibility for the maintenance of a system has been very difficult. The system described in Diagram 3 exists in only a few areas where health committees are functioning. In areas without committees, the chief or his delegate is the major force. The Public Health Unit works together with the chiefs and local health committees to:

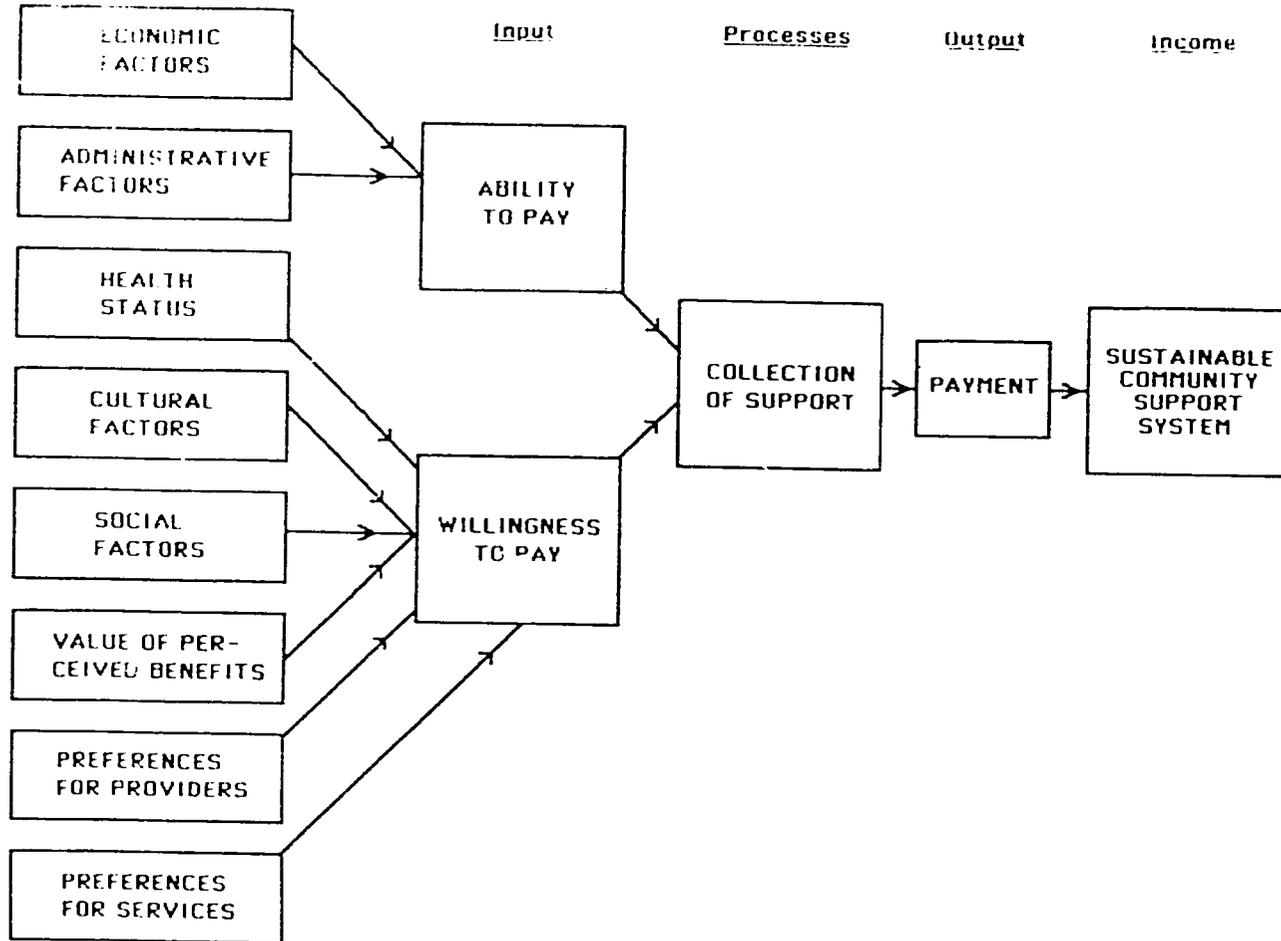
- develop criteria for the selection of RHMs
- define priority health problems
- define the supervisory relationship

The communities actually select the RHMs, develop community support schemes and develop other forms of participation. All these areas are necessary for a sustainable community support system. The Public Health Unit has been very active working with local communities, leaders, and traditional healers to explain the importance of PHC and the RHM program. Mass media campaigns have also been launched promoting PHC. The area that seems weak is the follow-up of the activities of the Public Health Unit and the Health Education Centre in working with communities to develop ways that communities can participate more fully in the program and take more responsibility for its administration.

Diagram 4 looks at the components of a community support system. Two major determinants of the system are the ability of people to pay and their willingness. Each of these has certain constraints associated with it. Economic factors such as homestead income or production effect the actual ability of the homestead to pay. Other constraints include administrative factors like the existence of committees to collect or organize support, and literacy or accounting experience if money management is involved. An individual's willingness to pay may depend on health status, cultural factors, social factors, value of perceived benefits, availability of health services and preference for certain

4. COMMUNITY SUPPLEMENTAL FUNDING SUB-SYSTEM MODEL

Diagram 4



providers or services. The actual process we are examining is the collection or organization of support which leads to an output of support and the outcome is a sustainable support system that can be operated by the community.

5.2 Solution Development

As described in the section on methodology, a list of possible constraints on the range of feasible solutions was compiled. Data on these variables was collected from four sources: literature, rural homesteads, the RHM and the chiefs. The results of the research will be presented in accordance with this list.

A. Geographic/Demographic Constraints

The major constraint in this area is the spatial distribution of the population. The rural Swazi population tends to be thinly spread over a wide geographic region with very few population centers. The Swazi government is placing emphasis on the creation of rural communities in order to facilitate the provision of social services. At the present time access to health care is restricted by the distance people must travel to a clinic or hospital. This also presents a problem for the RHM who must walk long distances to cover her 30-40 homesteads.

The general demographic patterns in Swaziland are similar to many developing countries. Fifty percent of the population is below the age of 15. In our survey we found the average size of the homestead was 8.69 with an average of 2.4 children under the age of 5. While extended families are common in the rural areas, we found only 1.2 households per homestead.

B. General Infrastructure

The bus is the most common means of transportation. Good transportation links the larger cities; remoter areas generally have one or two buses per day. Because of the distribution of the homesteads,

many homesteads are several kilometers from a bus stop. Access to health care is often constrained by the schedule of the bus transportation which also adds to the cost of a health visit.

C. Health Status

Approximately 50% of the homesteads interviewed in the survey had at least one member who sought health care in the four weeks prior to the survey. The average was 1.03 visits per homestead per month. Of homesteads seeking care the major health complaints on the most recent encounter were:

TABLE 1

DISTRIBUTION OF DISEASES REPORTED BY
ADULTS AND CHILDREN: SEPT-OCT 1984

<u>Complaint</u>	Percent of	
	<u>respondents</u>	<u>children</u>
Respiratory infections	17.5	25.4
Stomach problems	16.7	12.0
Diarrhea and vomiting	2.1	20.7
Urinary problems	8.4	1.4
Childbirth and complications	8	
Measles		12.4
Other diseases	34.6	15.8
Signs and symptoms	33.1	13.6

A recent nutritional survey, 1983 has revealed that approximately 30% of children under 5 are stunted and 1% are wasted. The situation was similar throughout the country. One group identified as at higher risk of malnutrition was children of weaning age 18-24 months. The report mentioned early weaning practices and poor nutritional weaning foods as factors.

D & E Cultural and Social Factors

In the survey we asked which type of health provider was most recently visited.

TABLE 2

DISTRIBUTION OF VISITS MADE TO HEALTH PROVIDERS IN
A FOUR WEEK PERIOD

Provider	Child		Adult		Total	
	No	%	No	%	No	%
Government Nurse	162	64.8	190	55.9	352	59.7
Mission Nurse	56	22.4	49	14.4	105	17.8
Traditional Healer	13	5.2	46	13.5	59	10.0
Government Doctor	11	4.4	23	6.8	34	5.8
Mission Doctor	6	2.4	4	1.2	10	1.7
Private Doctor	2	0.8	28	8.2	30	5.1
TOTAL	250	100.0	340	100.0	590	100.0

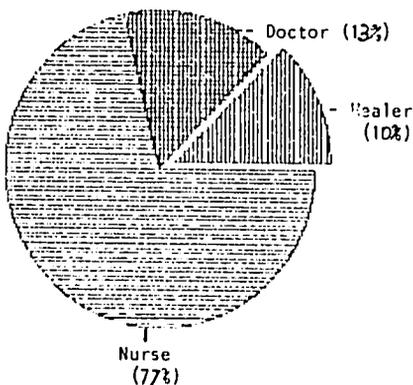
As seen in the above table, the government nurse was visited most often by both adults and children (59.7%), followed by the mission nurse (17.8%). Together they account for 77% of visits to health providers. This is followed by doctor visits (13%) and lastly visits to traditional healers (10%).

The distribution of visits of children and adults is different. Children are attended more often by a nurse, 87% versus 70% for adults. Adults tend to prefer doctors and traditional healers.

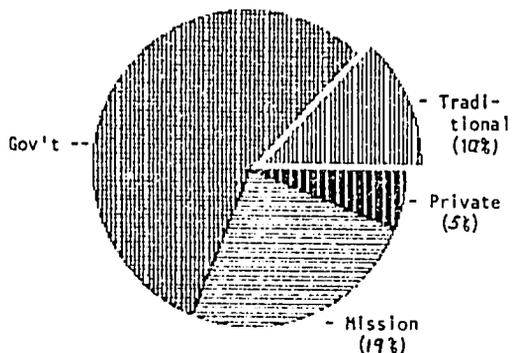
When the utilization pattern is examined by sector, government facilities account for 65% of the visits followed by the mission sector with 19% of the visits, Diagram 5.

Diagram 5

DISTRIBUTION OF PERSONS BY
HEALTH PROVIDER VISITED
Sept-Oct, 1984



DISTRIBUTION OF PERSONS BY
SECTOR OF HEALTH SERVICES USED
Sept-Oct, 1984



Children, however use government facilities more than adults, 69% versus 41%. Adults, on the other hand, had a greater utilization of services in the traditional and private sectors.

We also looked at the types of complaints reported by the respondent and the type of services sought. The distribution of complaints was very similar between those visiting traditional healers and those visiting doctors and nurses. It did appear that many acute infectious complaints such as colds, flu, sore throat, diarrhea were seen by doctors/nurses. More chronic unspecified complaints were seen by traditional healers such as general aches and pains (Table 3).

TABLE 3

DISTRIBUTION OF DISEASES REPORTED BY TYPE OF PROVIDER
VISITED ADULT AND CHILD VISITS COMBINED, SEPT-OCT, 1984

CONDITION	No.	Traditional Healer	Doctor/Nurse
Stomach Ache, Vomitting, Digestion	144	11.3	13.3
T.B., Bronchitis, Chest problems	72	8.1	6.5
Urinary, STD, Bladder childbirth, Pregnancy, Delivery	50	3.2	4.7
Injuries, Accidents, etc.	41	3.2	3.8
Eyes, Ears, Mouth	42	3.2	3.9
Other	46	4.8	4.2
Other	247	17.7	23.3
Colds, Flu, Sore Throat	135	1.6	13.1
Diarrhea and Vomitting	113	3.2	10.8
Joint pain, Rheumatism, Back Ache	25	9.7	1.8
Aching Painful Body	41	16.1	3.0
Other Signs and Symptoms	132	17.8	11.8

In the survey we also asked homesteads in RHM areas about their willingness to support the RHM. 28% of the respondents were prepared to support the RHM financially and 64% in-kind. A disturbing factor was that not one of the 31 RHMs interviewed felt that the community would be willing to support them financially, mainly because they were regarded as already earning a salary from the government. Fifty percent of the RHMs felt communities would be willing to give them in-kind support and in fact these RHMs were already receiving food and vegetables. Only 5 chiefs were interviewed. One was unconditionally in favor of financial support, one was willing to provide support if the RHMs were properly supervised; the other three were categorically opposed to it.

The data from homesteads was further analyzed to determine if there were any factors associated with the willingness to support. The only factor identified was geographic area. Other factors not associated with willingness to support were: date of most recent RHM visit, mean amount spent on health care, time required to travel to a clinic, average waiting time, type of provider (doctor/nurse), sector of health services last used (government, mission, private), activities and services performed by the RHM and existence of development committees. There were a number of contradictory results such as areas with the poorest RHM coverage had the greatest number of homesteads willing to support. Even though the questions asked were very precise "how much would you give" and "how often", people may still have given the "polite yes" response rather than the true answer.

Both RHMs and the respondents felt that water and clinic services were the greatest priority in their areas. Thinking that areas seen as priorities would be supported by communities, we reviewed the evaluations of several water projects. In an evaluation of Swaziland Rural Water, Sibisi (9) points out that:

"It is not possible to get people of the 'village' to join in for common purposes to benefit the 'village' because there is no village. What exists in the locality are homesteads which are near each other."

The evaluation found that water committees set up to collect money were largely non-functioning. The result was that one person, usually the Headmaster of the primary school, assumed full responsibility. The report also pointed out the people were reluctant to contribute for a service that is not controlled by the community and restricted to those contributing money. They also point out that it is difficult to define boundaries of communities and consequently which homesteads are entitled to water.

In another evaluation by Hoadley and Green, 1983 (10), they found community participation was limited to labor. There were no cash contributions but the community was involved in planning the system.

The power structure of an area is the following. The chief is the formal leader of an area and has supreme authority but generally will not oppose the wishes of the people and lose prestige or popularity (11). His control over traditional matters is well recognized. Development committees are the most effective where the chief uses his authority to raise money or mobilize people. Green also found that people are less motivated to participate in a development project if they have lost money in a previous project or the project had failed.

F. Economic Factors

The average per capita homestead cash income is E425-475 in rural areas and E820 in urban areas or E3,400-3,800 per homestead adjusted for 1984 (12). The Swaziland Rural Homesteads Survey (13) found the mean monthly expenditure per homestead was E110. Food purchases accounted for the greatest expenditure (47%). Services including health consisted of only 5%.

The results of the rural survey indicated that adults had spent E3.91 and children E1.00 on health care in the last four weeks. Table 4 shows the average spent in various categories.

TABLE 4

PERSONAL EXPENDITURE ON HEALTH CARE IN THE LAST FOUR WEEKS

ITEM	ADULT		CHILDREN/HOMESTEAD	
	NO.	MEAN	NO.	MEAN
Doctor	571	E0.86	484	E0.26
Nurse	572	E0.32	486	E0.55
Medicine	572	E0.52	486	E0.37
Transpor	572	E0.70	486	E0.36
Traditional Healer	572	E1.51	486	E0.45
TOTAL	572	E3.91	486	E1.00

G. Health Sector

Health services are provided fairly equally by three differer sectors: government, mission and private including company run clinic and traditional healers. The RHM program however is a government progra and linked most closely with government services. From Table 5, th length of time spent travelling to see a government nurse or traditiona healer was the shortest and to mission doctors and nurses the longest Table 6 presents the distribution of waiting times. There doesn't see to be any pattern except that traditional healers seem to be the mos responsive.

TABLE 5

DISTRIBUTION OF TIME TRAVELLED BY TYPE OF PROVIDER VISITED
ADULT AND CHILD VISITS COMBINED, SEPT-OCT, 1984

Provider	No.	PERCENT DISTRIBUTION OF TIME			
		0-30 min.	31-60 min.	61-120 min.	121-Over min.
Traditional Healer	48	31.2	20.8	31.2	16.7
Government Nurse	513	31.2	32.0	23.6	13.2
Government Doctor	74	4.0	32.4	40.5	23.0
Private Doctor	54	25.0	22.2	27.8	24.1
Mission Doctor	30	10.0	36.7	23.3	30.0
Mission Nurse	162	18.5	30.0	20.4	30.2
TOTAL	881	25.5	30.8	25.1	18.6

TABLE 6

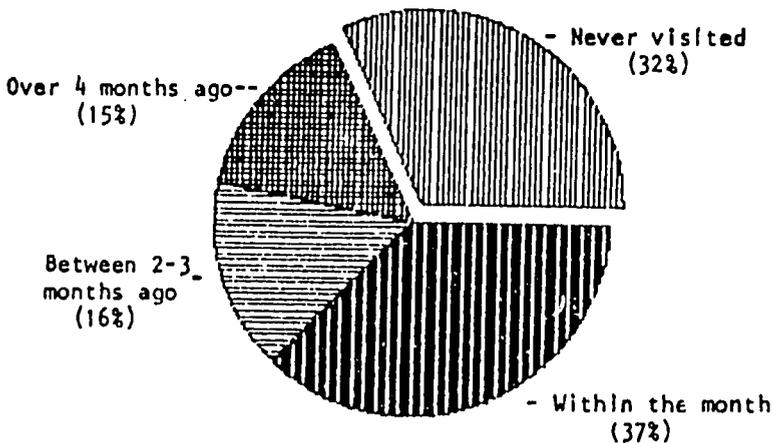
DISTRIBUTION OF WAITING TIME BY PROVIDER
ADULT AND CHILD VISITS COMBINED, SEPT-OCT, 1984

Provider	No. min.	PERCENT DISTRIBUTION OF TIME					
		0-10 min.	11-20 min.	21-30 min.	31-60 min.	60-120 min.	121+ min.
Traditional Healer	45	70.5	14.6	4.2	0	4.2	6.2
Gov't Nurse	513	21.0	26.1	20.1	23.8	5.6	3.3
Mission Nurse	162	21.7	23.0	21.7	25.5	5.6	2.5
Gov't Doctor	74	17.6	23.0	32.4	20.3	2.7	4.0
Mission Doctor	30	23.3	36.7	6.7	10.0	0	23.3
Private Doctor	54	35.9	9.3	20.4	9.3	3.7	18.5
TOTAL	581	24.7	23.9	20.1	21.2	5.0	5.0

The RHM program is a population based program implemented on the basis of the Tinkhundla (a traditional administrative district). At present 15 of the 40 Tinkhundla are covered by between 500-600 RHMs. Each Tinkhundla can have 1-15 chiefs. Of the 14 chiefs' areas selected from Tinkhundla covered by the RHM program, three areas still had no program. Of the 11 areas with programs, 68% of homesteads reported at least one visit and 32% reported no visits.

Diagram 6

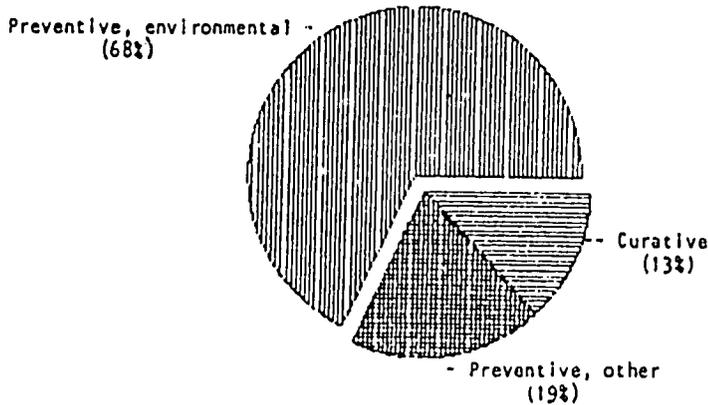
DISTRIBUTION OF HOMESTEADS BY DATE OF
MOST RECENT RHM VISIT: SEPT-OCT 1984



As can be seen in Table 7, the most common activity reported by the respondent is related to keeping the homestead clean. In general, 68% of the RHM activities are related to environmental protection, 19% to other preventive efforts such as nutrition, immunization, pregnancy care and family planning, see Diagram 7. Only 13% of their activities were related to curative services or referral. Not mentioned at all were home deliveries, communicable diseases, mental health, literacy, collaboration with other extension workers and community development.

We also asked the 31 RHMs similar questions. Eighty-seven percent reported that they visited homesteads with different regularity. The most common reasons given were the nearness of the homestead and the level of need. The person contacted most often in the homestead was the women, only 9 (29%) reported talking to men of the time, 55% of the RHMs reported that people often came to them for assistance usually First Aid or curative help, and an additional 30% reported that this happened occasionally.

DISTRIBUTION OF RHM ACTIVITIES
Sept-Oct, 1984



Part of the difficulty with the program has been the distribution of supplies. Forty-two percent of the RHMs reported that they had no supplies at the present time. Of those with supplies most reported aspirin and bandages, a few had burn medicine, wound medicine and cotton wool.

The most commonly cited problem was the difficulty experienced in motivating the community, particularly related to digging toilets. About 70% received some help from the local clinic, usually drugs or health talks. The community offered much less support. Fifty-two percent said no one in the community helps them. Seven cited other RHMs as a source

TABLE 7

DISTRIBUTION OF HOMESTEADS BY THE ACTIVITIES
OF THE RHM

Activities of RHM	HOMESTEADS	
	No.	%
No activity	2	0.6%
Advise on cleaning and sweeping yard or homestead	288	93.2%
Advise or assistance in digging toilets	287	92.9%
Advise on burning rubbish or digging rubbish pit	272	88.0%
Advise on treating water, using Jik, boiling, spring protection	199	64.4%
Advise on personal hygiene, washing clothes	130	42.1%
Giving First Aid, medication tablets	112	36.2%
Referral to clinic for treatment	94	30.4%
Advise or assistance in agriculture, cooking, nutrition	92	29.8%
Educate, assist or refer for immunization, child health, pregnancy care, family planning	70	22.6%
Other	10	3.2%
TOTAL	1,556	

of local help. Others mentioned were community members, chiefs, Red Cross workers and extension workers. There was no mention of local development committees.

H. Political and Administrative Factors

The Ministry of Health has articulated a health policy:

"to improve the health status of the Swazi people by providing preventive, promotive, rehabilitative and curative services which are relevant and accessible" (14).

Unfortunately less than 15% of the budget is spent on promotive programs. In the next five year plan, there is an emphasis on strengthening the RHM program and providing in-service training.

The major donor inputs into the program 1981-1982 were:

Donor		Estimated amount
UNICEF	Pre-service training, 81-82	E30,000
	Home delivery kits	E 2,888
USAID	Technical Assistance 81-82	E57,000
	(in the form of training work-shops on supervisory and training skills and revision of RHM training curriculum and costs for consultant	
	TOTAL	R90,333

The locally borne costs of the program are: salaries, petrol and miscellaneous costs. In 1981 estimated expenditure was E91,950, of which 50% was stipends for the 226 RHMs. By 1985-86, the costs will have doubled to E184,650, 62% of which will be for stipends for 561 RHMs. The amount will probably double again before the entire country is covered.

USAID's stated priorities are for programs effecting those children under two years especially ORT, nutrition surveillance and immunization.

UNICEF's goals also stress children under 5; again emphasizing ORT, nutrition surveillance and immunization.

Communities are already funding a number of self-help local projects; schools, clinics etc. Because many of these projects are fragmented, the total cost to communities is probably grossly underestimated. In a study by Green (15), he found that in addition to the traditional communities, there was an average of 6.6 development committees in a chief's area; school, woman's, farmer's, cattle and clinic were the most common. Many of these have fund raising as a principal goal. In spite of the diversity of the development committees most people cited, the traditional committees were the most effective in dealing with development problems. In our study most homesteads were unaware of any development committees in their areas. The effectiveness of these committees is of question.

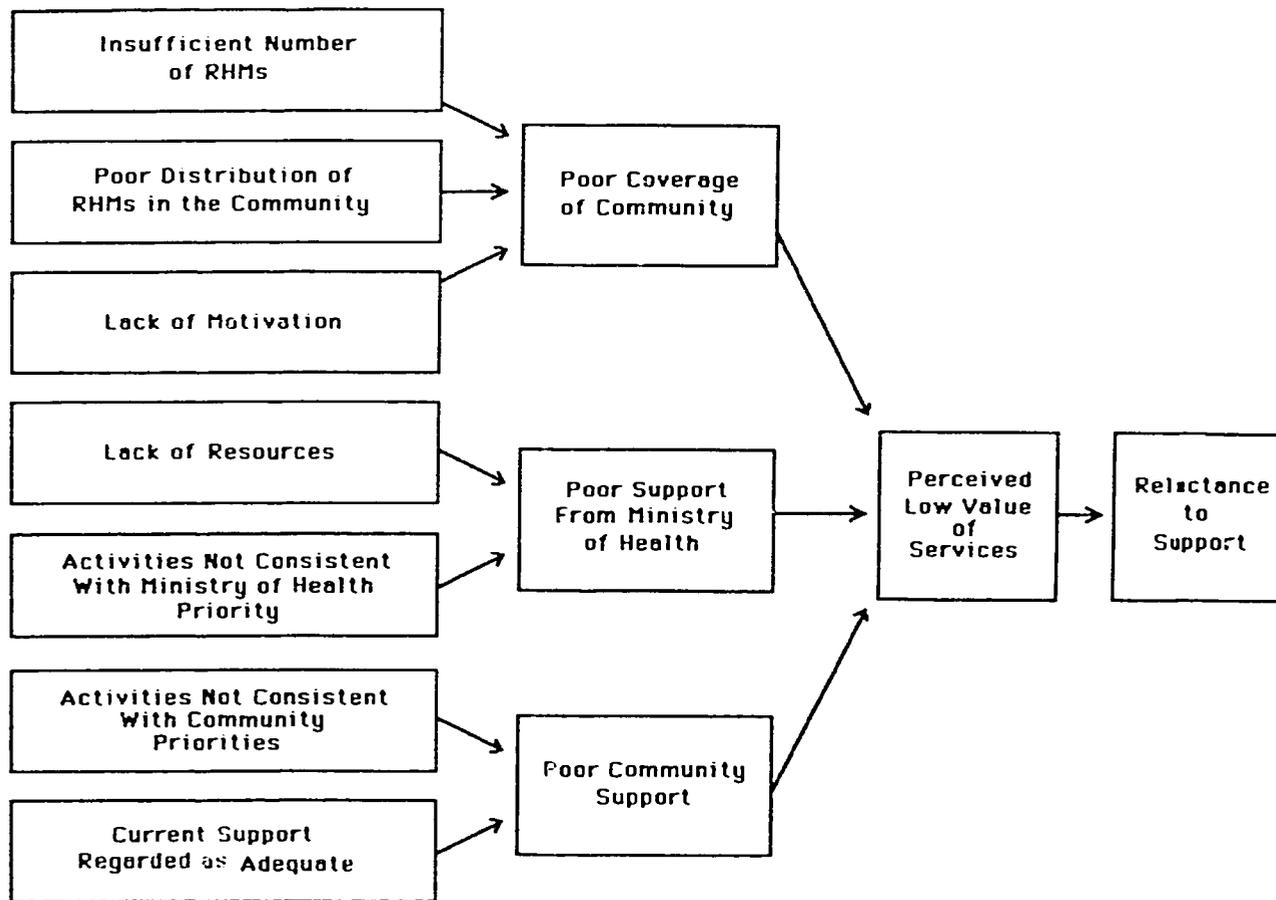
The conclusion at this stage was that the community was reluctant to support the RHMs financially for the services they received, principally health education. But that there was a need for a PHC worker at the community level as evidenced by the 85% of RHMs who reported people seeking them out for health care. The reluctance of the community to offer support seemed to be based on a combination of factors. There are many demands on their time and resources and so they are unwilling to take on another burden unless they can perceive a value from it or it is seen as a high priority. This was not the case with the current RHM activities. We were able to identify three areas where the system broke down: (Diagram 8).

poor coverage of the community: Many homesteads in an area had never been visited by an RHM and others only infrequently. The numerical lack of RHMs, their poor distribution within the community and the lack of sufficient incentive can explain this. Another difficulty was that the boundaries of a clinic catchment area and those of RHMs' areas did not always correspond.

- poor support from the Ministry: We found that many RHMs had no first aid supplies or medicines and had little supervision. Their activities focussed primarily on environmental sanitation, an area where the Ministry had a weak infrastructure and this area did not correspond to the current priorities expressed in the Ministry's Five Year Plan and areas of donor support which are ORS, immunization, nutrition surveillance and pre-natal care. We also found the Ministry very reluctant to support the curative role of the RHM and preferred to regard them as purely health education workers.

- poor community support: We found that RHMs had very little routine contact with members of the community such as the chief and development committees and that their activities were not consistent with the communities' priorities, i.e. water and curative services. While many homesteads offered in-kind support, most felt that the RHMs were adequately supported by the Ministry.

DIAGRAM 8 SYSTEMS ANALYSIS OF THE RELUCTANCE TO SUPPORT THE RHM



Much of this could probably have been predicted from the literature. However, we had not anticipated the degree to which the RHM had concentrated on only a few activities out of the many she/he was trained in, and the poor coverage of homesteads by the RHMs' services. In general, we found that most RHMs were trying to do their job but were becoming increasingly frustrated with their work.

On the basis of the problem analysis, we held discussions with Ministry of Health personnel. From these discussions we were able to compile a list of the decision variables and constraints relevant to the operational problem: i.e. what is the most appropriate method to sustain the RHM.

Decision Variables: Types of activities performed by the RHM

- Constraints:
- They must be a community priority
 - They must meet MOH priorities and be an area of sufficient resources
 - They must require minimal supervision
 - They must require minimal supplies
 - They must motivate and give the RHM incentive
 - They must be acceptable to the MOH
 - They must require no outside funding
 - They must generate community support
 - They must require a short implementation period
 - They must require a short training period.

Decision Variables: Structure of the support scheme.

- Constrain - RHM responsibilities are primarily preventive
- Clinic population is different from RHM area
 - It must be easy to administer

Decision Variables: geographic area

- Constraints:
- There must be a community organization
 - The chief must be interested in the project
 - The local clinic nurse and district supervisor must be interested.
 - The scheme must be closely monitored and followed-up

Had we not done the problem analysis, we would have designed and implemented a funding scheme assuming all the RHMs were working according to their job description. The scheme most certainly would have failed making communities even more reluctant to undertake support schemes in the future. Once we accepted the idea that the activities of the RHM might have to be redirected, developing alternative solutions became a straight forward task.

Two matrices were created. One for RHM activities and one for incentives.

The first matrix, Diagram 9, on activities was derived from comments of RHMs, experience of other projects, discussions with health professionals and the results of the community survey. Across the top are listed the constraints and along the side the possible activities of the RHM. A scoring scheme was developed where if the type of activity satisfied the requirement in the constraint: to a high degree we gave it a ++ or (+2); to a moderate degree a + or (+1); to a negative degree a - or (-1) or to a very negative degree a -- or (-2). We totalled the scores and the alternative scoring the highest was to reinforce primary health care skills. The other three areas: to extend RHM responsibilities to include more curative duties; to include home deliveries and to include family planning are still very worthwhile and should be encouraged. The constraints that we found may not always exist and these activities can be considered as part of an RHM program in the future. At this point in time, they would have been far too ambitious an undertaking for the PRICOR project.

Diagram 9

MATRIX OF ACTIVITIES OF RURAL HEALTH MOTIVATORS VERSUS CONSTRAINTS

	Satisfies community priority	Meets MOH priority	Requires minimal supervision	Does not require regular supplies	Sufficient to motivate the RHM	Duties acceptable to MOH	Literacy not required	No outside funding required	Generates income	Requires short implementation period	No extensive training required	SCORE
REDEFINE CURATIVE RESPONSIBILITIES	++	+	-	-	++	-	-	-	+	-	-	-2
INCLUDE HOME DELIVERIES	+	++	-	+	+	-	+	-	+	-	-	+2
PHC SKILLS REINFORCED	-	++	++	++	+	++	+	+	-	++	++	+13
FAMILY PLANNING		+	++	-	-	-	-	+	-	++	++	+2
SUPPORT PRESENT ROLE AS MOTIVATOR	--	+	++	++	-	++	+	+	-	++	++	+9

The three PHC areas selected for reinforcement were:

1. Examination of immunization records and promotion of immunization
2. Promotion of ORT
3. Introduction of growth monitoring as an RHM activity and provision of portable hanging scales for home weighing of infants.

The second matrix was on the type of incentive. The final decision on the method rests with the community. An analysis of incentives was done in order to better present them to the community. The list of methods was generated from discussions with RHMs, experience on other projects, the literature and discussions with health professionals. Four possibilities were ruled out immediately. Fee for service and drug sales were eliminated because the RHMs offered no curative services or drugs. A clinic surcharge was excluded because the population using the clinic and paying the surcharge is different from those receiving services from the RHMs. Sibisi (16) has shown that unless failure to contribute to a program denies the homestead the right to that particular service, the program will fail. It would have been administratively very difficult to ensure that only people paying a surcharge were visited by an RHM. If a person is healthy he may not go to a clinic or he may choose one in a different area.

Fines for non-compliance was also felt to be difficult to administer. By this we meant that homesteads failing to follow the advice of the RHM would be penalized. Since the chief could not be depended on to collect the fines, this scheme was rejected.

The prepayment schemes seemed to be the most practical and the easiest to administer. At this point we did not specify whether the prepayment should be in-cash or in-kind. We did carry out a crude sensitivity test to see what amount of cash would be appropriate. We want to emphasize that the final decision on the method of support remains with the community, the PRICOR staff can offer guidance and suggestions but cannot impose a particular system on a community.

Diagram 10

MATRIX OF METHOD OF SUPPORT VERSUS CONSTRAINTS

	NO CURATIVE SERVICES OFFERED (NO DRUGS)	CLINIC POPULATION DIFFERENT FROM RHM AREAS	EASE OF ADMINISTRATION
PREPAYMENT	++	++	++
FINES FOR NON-COMPLIANCE			X
CLINIC SURCHARGE		X	X
DRUG SALES	X		
FEE FOR SERVICE	X		

Our sensitivity analysis was as follows:

- a. The government set minimum wage for unskilled workers in the agricultural sector is E1.37 per day or E13.70 for 10 days work.
- b. The RHM is currently receiving E20 for part-time work or the equivalent of E40 for full-time. She has requested an additional E20 which would bring her compensation to E40/month. (part-time).
- c. The average monthly income per capita per rural homestead is E35-40 (17).
- d. The fees charged by other community projects such as water projects are E10-15 per homestead per year. Our fees should not exceed this. We made a table of what various contributions would be for different levels of RHM stipend.

RHM stipend	MOH contribution	Community contribution	Homestead* contribution
E40/month	E20/month	E20/month	E0.67/month E8.00/year
E30/month	E20/month	E10/month	E0.33/month E4.00/year
E20/month	E20?month	0	0

* based on 30 homesteads in an RHM area

The conclusion reached by the project was that given the other responsibilities of communities and the low value placed on the services of the RHM, the middle alternative was the most appropriate.

From the literature there seems to have been less experience in Africa with the prepayment type of scheme than with the more acceptable fee for services or drug sales. In particular sustaining any regular funding for a primary preventive promotive program has proven difficult. For this reason, the choice of an area for the field test is very important to the success or failure of the solution. Communities are at

different levels of development in terms of local organization and interest in health related matters. They also differ in their access to sufficient cash income that would enable them to support a financial scheme. Based on the constraints developed in the problem analysis, the following criteria were drawn up for the selection of the field test area:

1. The area should be a single chieftaincy with 5-10 RHMs working and reasonably close to the University to permit monitoring and follow-up.
2. It should have a health committee and have shown some interest in health matters.
3. The chief must support the scheme of community support of RHMs
4. The local clinic nurse and district Nurse Supervisor must be willing to become involved.

Conducting a field test under such optimum conditions means that if successful the results cannot be generalized to the entire country. However if it fails in this specially selected area, it is unlikely to succeed anywhere. Since more and more emphasis is being placed on community self-help schemes the results could offer some guidelines for future projects.

5.3.1. Introduction

At the conclusion of the solution development phase a field test was designed which would investigate two components. The first involved redirecting of the field test RHMs' activities by reinforcing selected primary health care (PHC) skills and the introduction of growth monitoring into the realm of RHM activities. The second component was to pilot a community based support scheme for RHMs. The field test objectives were delineated from these goals as follows:

Field Test Objectives

A. Reinforcement of PHC Skills

1. Present a review of Oral Rehydration Therapy (ORT). On completion of the session the RHMs should be able to:
 - a. List signs and symptoms of dehydration
 - b. describe preparation of sugar-salt solution (SSS) and its proper administration
 - c. describe and promote the use of a SSS kit.

2. Present a review of immunizable childhood diseases and the MOH recommended vaccination schedule. On completion of the course, the RHM should be able to:
 - a. Examine a child's immunization card and determine the child's current immunization status
 - b. Refer those children identified as inadequately immunized to the clinic

3. Introduce the new MOH child growth card. Give instruction and stress the theory and practice of growth monitoring. The RHM should be able to:

- a. Issue a child growth card and complete all the biographical data for a child
- b. Accurately weigh a child under 2 years old using a portable hanging scale and plot the weight on the growth chart
- c. Interpret the growth curve of a given child and discuss the implications with the mother
- d. Give advice on improving infant nutrition if the child does not gain weight for one month
- e. Refer children that are identified as not gaining weight over a period of two months to the clinic nurse.

B. Community Based RHM Support Scheme

1. The field test community will consider possible forms of prepayment support schemes and choose the most appropriate method.
2. Mobilization of community resources will occur to implement the designated support scheme.
3. The RHMs will receive compensation from the community for their work.

5.3.2 Background

The chiefdom is the unit of local government organization in Swaziland. The leadership hierarchy is headed by the chief, whose position is hereditary. Chiefs may allocate land, call on their subjects to deliver labor services, and approve or disapprove development projects in their areas. He is assisted by a deputy (indvuna) who does most of the daily administrative work of the area. Both the chief and his indvuna are expected to consult a council of elders (libandla) for

input towards making decisions or exercising authority. A third position within the local government is that of chief's runner (ungijimi). This individual performs tasks for the chief such as collecting fines and relaying messages (18).

When the chief dies, the indvuna of the community fills the position until such time as a new chief is appointed. This time in which the indvuna serves as interim chief can be quite protracted.

The community of Stondozi was identified as meeting the four criteria established for the field test site at the conclusion of the solution development phase. The indvuna, who has been serving as interim chief since 1981, expressed a strong interest in his community assuming more responsibility for supporting its eight RHMs. The local clinic was situated in Luyengo, approximately 20 minutes by bus from Stondozi. The clinic's Public Health Nurse took an active role in providing in-service training and supplies to the RHMs. She was deeply committed to helping them solve problems and would make home-visits with them as needed.

The clinic also had a local health committee associated with it. This committee had been instrumental in improving conditions at the clinic by levying a clinic surcharge to collect funds for expansion and addition of a maternity wing. A portion of the funds had been used to fence the clinic area and build a guard house to improve security. Unfortunately this committee was disbanded shortly after the field tests inception because of a dispute concerning the representation of the committee's membership.

The Stondozi chieftainship is comprised of 354 homesteads. Geographically it is quite varied, with the majority of its inhabitants living in the Lusuffu river valley and on the lower slopes of the mountain chain that transverses the area. The remaining population lives on widely scattered homesteads in the mountains, which rise 500 metres above the valley floor. The varied topography and poor road conditions can make transportation and communications within the Stondozi community protracted and difficult.

At the time the PRICOR field test was conducted there was another development project underway in Ntondozi. This project was coordinated by a local Peace Corps volunteer. Its aim was to check the severe soil erosion occurring at two sites by planting trees.

The Ntondozi RHMs are all women, with a mean age of 41. Their educational level ranges from 4 to 8 years of formal schooling. The mean educational level was 5.5 years of formal schooling. Their distribution in the community gives 6 RHMs responsibility for the valley population and leaves 2 RHMs to serve the mountain inhabitants. These two have the exceptionally difficult task of traversing terrain accessible only on foot and being responsible for larger areas than their valley counterparts.

For purposes of the PRICOR field test the Public Health Unit (PHU) designated the Mankayane area Nurse Supervisor as the representative to the community. She participated in all meetings held with the indvuna and his council of elders as well as the general community meeting. Her role as supervisor of the area RHMs was instrumental in monitoring progress of the field test.

It has been the national government's policy to encourage resettlement of rural communities in order to facilitate the provision of services such as water and electricity. The resettlement plans for Ntondozi call for the homesteads to be moved down off the mountain slopes and positioned in rows parallel to the main road. The evaluation survey revealed 57.5% of the respondents had been resettled, with 51.6% of these having moved in the previous 12 months.

Once the site was selected, the field test design allocated one month to allow for meetings to be held with the appropriate leaders and general community. The RHMs received a two day refresher course during this initiation phase.

Once the PHC and support components were established the field test was left to run for 6 months with a minimum of input from the investigators. Visits were made to homesteads with each RHM to assess the level of competence they had achieved in performing growth monitoring. Field test monitoring consisted of an investigator being

present at the monthly RHM payday to help solve any problems that arose. Two meetings were held with indvuna and his council during the 6 month period to discuss progress on the community support component.

An evaluation survey was performed after the field test had been in place 6.5 months. The survey was taken from a representative random sample from each RHM's area. The criteria established for evaluation of the field test were taken directly from the objectives. In addition, the RHMs, chief's runner, and clinic nurse were interviewed.

The relatively short period of investigation stands as limiting factor for the field test. The small size of the evaluation survey sample (64) also limits the conclusions that can be drawn from it. Finally, it must be remembered that Swazi communities are far from homogeneous. They vary tremendously in factors such as geography, availability of health services, as well as chiefs leadership style and orientation to development. This variability makes it difficult to extrapolate the field test results to other communities.

5.3.3 RHM Performance

Ideally, an RHM should have 30 to 40 homesteads which she visits once a month. The Ntondozi RHMs were assigned an average of 45 homesteads each by the chief's runner (umgijimi) on completing their training course in August 1982. At the time of the field test evaluation survey in February 1986 the distribution had become quite unbalanced, with two RHMs having less than 35 assigned homesteads, two others with over 50, and one RHM listing 60 homesteads. This maldistribution probably came about as a result of the massive resettlement activity in the community within the last two years. Two RHMs with adjacent areas chose to redistribute homesteads between their lists to make them even.

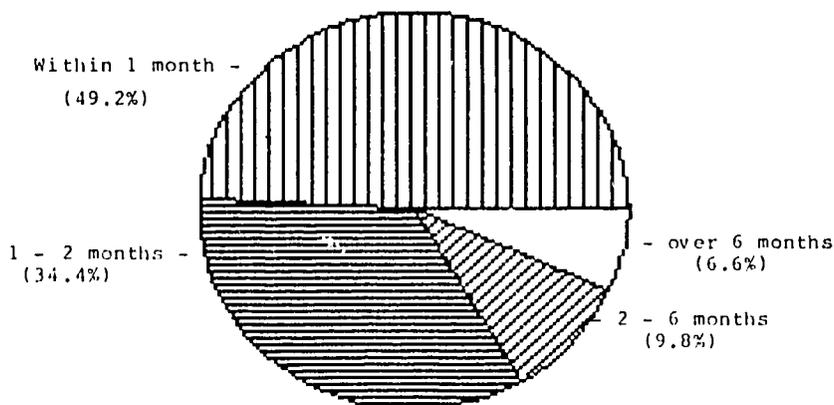
A. Frequency of RHM Visit

Sixty-three of the sixty-four homesteads sampled (98.4%) said they had been visited by an RHM. Among homesteads visited, 48.2% had received a visit from the RHM within the last month, while 83.6% had received visits within the preceding two months (see Diagram 11). Compared to

national averages found in the 1984 survey (see Diagram 6), the Ntondozi RHMs were making significantly more frequent visits than their national counterparts.

Diagram 11

DISTRIBUTION OF HOMESTEADS BY DATE OF MOST RECENT RHM
VISIT : NTONDOZI, FEBRUARY 1986



The occurrence of the last visit was analysed in relation to distance from the chief's kraal⁽¹⁾ and perceived change in visit frequency with no significant relationships found.

In an attempt to assess whether the field test intervention had influenced RHM visit frequency, people surveyed were asked whether the RHM visit frequency had changed in the last six months. Respondents indicating no change came to 68.8%, while 28.1% said there had been a change. From these responses it can be inferred that the RHMs were

(1) The chiefs' kraal serves as the meeting site for local traditional government.

active and making visits at appropriate intervals prior to the field test interventions, and they did not alter their visitation pattern in ensuing months.

Of the 28.1% of respondents who felt the RHM visit frequency had changed, 16% felt they were receiving more frequent visits now and 83% felt the visits were less frequent in the last six months than previously. There was a very similar distribution of responses when only the homesteads with one or more children under 2.5 years were considered. No significant findings appeared when this factor was analysed by individual RHM. It was hypothesized that an increase in visits would occur over the course of the field test. Rural women however, often bear the major responsibility for cultivating maize, and as the growing season overlapped with the field test the RHMs role as farmer may have taken precedence over her RHM responsibilities.

The RHM questionnaire reveals that all eight of the RHMs state that they visit homesteads with different regularity. Reasons for this included the level of need, distance and receptivity of the homestead.

The question was asked of the survey respondents; would they like more frequent visits by the RHMs? The majority, 82% indicated that they would. Of these, most specified that weekly visits would be ideal.

B. RHM Activities

It was hypothesized that there would be a measurable change in the distribution of activities of the RHM, with a higher proportion of activities corresponding to those topics covered in the field test refresher course. In order to test this, an open-ended question was asked concerning the content of the RHMs' activities (see Table 8). These activities were condensed into three categories; preventive environmental topics such as toilet construction, curative topics, including diarrheal treatment and "preventive; other", which include immunizations and growth monitoring (see Diagram 12). When compared to 1984 findings displayed in Diagram 6, it becomes clear that the field test hypothesis was not borne out.

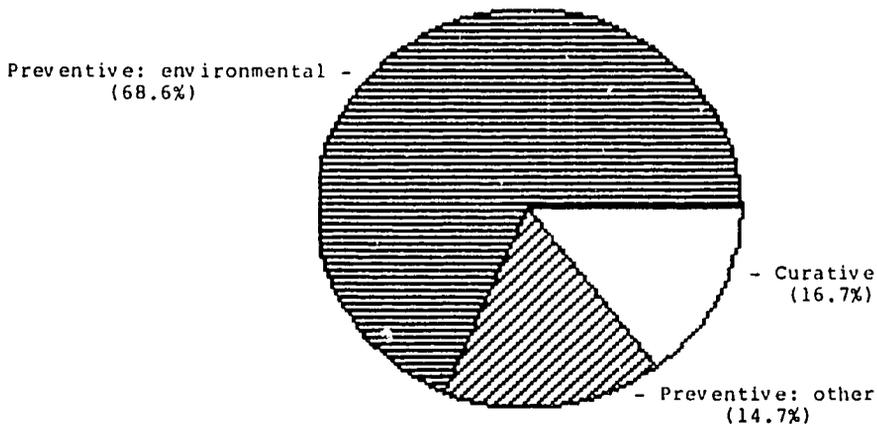
When asked if there had been a change in the topics discussed by the RHM in the last six months, 59.4% of the respondents answered no. This proportion dropped to 45.6% when only homesteads with children under 2.5 years were considered. When this question was analysed by individual RHM there was no significant differences between them.

TABLE 8

DISTRIBUTION OF HOMESTEADS BY THE ACTIVITIES
OF THE RHM : NTONDOZI, FEBRUARY, 1986

Activities of RHM	Homesteads (n = 63)	
	Number	Percent
Advise on cleaning and sweeping yard on homestead	52	82.5
Advise or assistance in digging toilets	55	87.3
Advise on burying rubbish or digging rubbish pits	39	61.9
Advise on treating water, using Jik, boiling, spring protection	10	15.9
Advise on personal hygiene, washing clothes	8	12.7
Giving First Aid, medication, tablets	2	3.2
Referral to clinic for treatment	2	3.2
Educate about home treatment for diarrheal illness in children	36	57.1
Advise or assistance in agriculture, cooking, nutrition	9	14.3
Educate, assist, or refer for immunizations	17	26.9
Weighed infant and wrote on growth card	5	7.9
Educate, assist, or refer for pregnancy care, family planning	4	6.3

DISTRIBUTION OF RHM ACTIVITIES: NTONDOZI, FEB 1986



The absence of the predicted shift in activities has several possible explanations. All three PHC topics that were presented to the RHMs are also topics that the clinic nurse is likely to address during a child's clinic visit. Since the message has two sources, the respondent may tend to attribute the origin to the source of higher authority, namely the nurse. This line of reasoning also explains why homestead cleanliness and latrine construction receive such high ratings; because the RHM is likely to be the only source of these messages. Likewise, the RHM may have a tendency to stress activities that are unique to her position.

C. Utility of RHM Visit

Asked if they found the RHMs visit useful, 89.1% of the respondents said yes. When asked to explain in what way they found the visit useful a variety of reasons emerged (see Table 9).

TABLE 9

UTILITY OF RHM VISIT: NTONDOZI, FEB. 1986

	Homesteads (n = 63)	
	Number	Percent
<u>Useful:</u>		
Tablets or Immediate Treatment	20	31.3%
Homestead improved	15	23.4%
We are in better health	5	7.8%
Other	13	20.3%
<u>Not Useful</u>	3	4.7%

All three respondents stating the RHMs visit was not useful specifically noted that they were given no tablets. This, in combination with the high frequency of responses mentioning the RHMs curative functioning (tablets or immediate treatment) indicates the community's tendency to perceive the RHM in a curative role rather than a primarily preventive one.

D. RHM Attitudes/Perceptions

When the RHMs were asked if they felt the community appreciated their work, seven answered affirmatively while one said the community had given her no indication. Asked to explain, three RHMs said the community was happy with their work and one indicated that the indvuna was pleased. Several RHMs mentioned specific activities such as oral rehydration therapy, problem solving and improving the standard of living as being reasons for community approval.

All eight RHMs stated that they perceived a change in the community's attitude toward their work since the PRICOR field test began. Two of them indicated that there was better community response to their health teachings now, while six stated that people were happy to have their infants weighed at home. Six of the RHMs also indicated that more people were coming to them about children's health problems than prior to the field test. This observation indicates the impact of the refresher course may have been to broaden the community's perception of the RHMs role in relation to children's health.

E. Job Satisfaction

The RHMs were asked to indicate what aspects of their work they found most enjoyable. Seven indicated that they felt the community appreciated their work. Four of them found having people respond to their teachings to be satisfying, while two stated they felt their work had given people a better standard of living. Learning new things was enjoyable for two of the RHMs. Only one RHM mentioned the income as a source of gratification from the job.

When asked to talk about the frustrations of their job all eight RHMs mentioned the difficulties of trying to work with people who refused to listen. Two RHMs complained of vicious dogs and one about the distance she was expected to cover. Two complaints related to income. One RHM said E.20 wasn't sufficient while another explained that she had a home business which would bring much more income if she could devote more time to it.

A very significant issue raised by four of the RHMs was that their husbands objected to their work. When elaborating on this, two of them indicated that they had to neglect their responsibilities at home in order to perform their RHM visits. Another explained that her husband objected "because of the problems I usually meet in some homesteads". When this factor was compared to the survey question relating to perceived change in visit frequency, those RHMs with husbands who objected were not perceived as visiting significantly less frequently. Obviously, if the RHMs' job is a source of marital conflict it is a serious detraction indeed.

This issue of husband dissatisfaction arose in the initial meeting with the indvuna and his council of elders. The indvuna stated that some RHMs were not working well because of their husbands. These men, he said were suspicious of what their wives did when they were away from the homesteads for long periods of time. He went on to explain that the PRICOR investigators should call a meeting of the RHMs' husbands to try and enlighten them about the RHMs responsibilities. In consultation with

the PHC representative it was decided that this gesture would be unnecessary. In retrospect, it may have been a disservice to the RHMs not to have acted on the Indvuna's suggestion.

Finally, the RHMs were asked how the PRICOR project might have benefited them. Seven stated that they were happy to have learned how to weigh children, three mentioned immunization information and one mentioned ORT. Two of the RHMs said they were now more interested in their work. The support component was not mentioned as a perceived benefit.

5.3.4 PHC Skills Component

A. Immunizations

A special referral slip was distributed to the RHMs at the end of the refresher course which they were instructed to put inside an immunization card when they reviewed the record and found the child was due for another immunization. The clinic nurse and two mobile clinics operating in the area were asked to collect these referral slips for the researchers. A total of 28 referral slips were collected from the 3 clinic sites in the first four months of the field test. No further slips were collected in the last two months. It was discovered later that some of the clinic staff had been disposing of the referral slips, so the actual numbers were probably higher. An additional three slips were found on homesteads by the interviewers during the evaluation survey. Thus it appears there was a good rate of compliance for mothers in response to an RHMs' referral to the clinic for immunizations.

It is important to note that the clinic nurse indicated on more than one occasion that she had seen a dramatic increase in the number of children arriving from Ntondozi for immunizations.

When asked an open-ended question concerning RHM activities, 26.9% of the survey respondents mentioned that the RHM discussed immunizations. When asked directly if the RHM had ever talked about immunizations 85.9% answered yes, and on homesteads with one or more children under 2.5 years of age this rose to 97.3%.

The immunization status of the children aged 1 year to 2.5 years old was examined and compared to results of a national survey conducted by Swaziland MOH for the Expanded Program for Immunization in December 1985 (10).

TABLE 10

<u>IMMUNIZATION STATUS (AGE: 1-2.5 YEARS)</u>		
<u>Status</u>	<u>M.O.H. survey (Dec 1985) (n = 852)</u>	<u>PRICOR survey (Feb 1986) (n = 27)</u>
1. Fully Immunized (full course of BCG, DPT, OPV, & Measles)	51.25%	51.8%
2. Partially Immunized	44.75%	40.7%
3. Not Immunized	4.0%	7.5%
	<u>100.0%</u>	<u>100.0%</u>

The immunization status of the Ntandozi 1-2.5 year olds sampled is consistent with national averages, in spite of the RHM refresher course intervention and subsequent referrals.

The immunization status of children aged 2 months to 12 months old was also examined.

TABLE 11

<u>IMMUNIZATION STATUS (AGE: 2-12 MONTHS)</u>	
<u>Status</u>	<u>(n = 17)</u>
1. Fully Immunized For Age (up to date on immunization schedule)	33.3%
2. Partially Immunized For Age (more than 1 mo. late on immunization schedule)	50.0%
3. Not Immunized	16.7%
	<u>100.0%</u>

No national figures exist for this age group, but if these results can be presumed to be consistent with national averages, the population of under one year old children are significantly less protected by immunizations than their older siblings.

An intensive national immunization campaign was initiated in October 1985 which is expected to dramatically increase the number of fully immunized children in 1986.

B. Oral Rehydration Therapy

Oral rehydration therapy (ORT) was the other PHC topic reviewed in the course given for the Ntandozi RHMs. On the evaluation survey an open-ended question concerning RHM activities revealed 57.1% of the respondents mentioning that the RHMs discussed home treatment for diarrheal illnesses in children. When asked specifically whether the RHM talked about this topic, 95.3% of the respondents answered yes. Sixty-three (98.4%) of the sixty-four respondents stated that they used sugar-salt solution (SSS) when a child had diarrhea, while the remaining respondent said the child with diarrhea was taken to the clinic. From this response, it appears that the use of SSS as a home treatment for infant diarrhea has good acceptance in the Ntandozi community.

A national campaign was conducted from September 1984 to April 1985 to encourage the proper use of the sugar-salt solution among rural mothers in response to infant diarrhea. In relation to RHMs contribution to this campaign, the preliminary results of the as yet unpublished national survey (MMHP USAID 1985) show that 36.4% (n = 450) of the homesteads were visited by the RHM. However, in the PRICOR survey, a higher number of homesteads, 98.4%, (n = 64) had been visited by the RHM. Of the 36.4% visited by the RHM in the national survey, 16% stated that the RHM had discussed diarrheal treatment and in the PRICOR survey of those visited by the RHM, 57.1% stated that diarrheal treatment had been discussed. It should be pointed out that the discrepancies between the national survey and the PRICOR survey are probably due to the fact

that RHMs in the Ntondozi area in the PRICOR survey were exceptionally active by national standards and ORT was emphasized in the refresher course for these RHMs.

Both surveys also tried to identify the rural homesteads sources of information concerning the use of sugar-salt solution.

TABLE 12

SSS MIXTURE: SOURCE OF INFORMATION

Source	National Survey (n = 431)	PRICOR Survey (n = 64)
1. Rural Health Motivator (RHM)	6.7%	90.6%
2. Radio	62.0%	45.3%
3. Clinic Nurse	56.8%	21.9%

When asked for sources of SSS knowledge in the PRICOR survey, it would be likely that the respondent would list the RHM because all the previous survey questions have dealt with the RHM. This response by association may account for the large discrepancy between surveys.

The national campaign focussed on transmitting knowledge about the proper way to mix the sugar-salt solution. The recommended formula for the campaign was 1 litre boiled water, 8 caps of sugar, and $\frac{1}{2}$ cap salt. This was a change from the formula recommended previously which called for 1 cap salt (a possibly toxic amount). The post-campaign national survey found 21.1% (n = 431) of the respondents could give the correct amounts of all three ingredients in SSS, while the PRICOR survey respondents gave the correct formula 35.9% (n = 64) of the time. This increase in knowledge over national averages within the field test area could be explained by the frequency of RHM contacts and messages concerning the treatment of diarrhea in infants.

TABLE 13

KNOWLEDGE OF SUGAR-SALT SOLUTION

Knowledge	Number	Percent
Knew correct amounts for all three ingredients	23	35.9
Knew correct amounts for water and sugar but using one cap salt	15	23.4
Gave incorrect amounts	16	25.0
Could not give amounts	<u>10</u>	<u>15.6</u>
Total	<u>64</u>	<u>100.0</u>

The fact that 98.4% of the people surveyed said that SSS was used to treat infant diarrhea is admirable, but only 35.9% of them would mix the correct solution. Combining those who gave incorrect formulas with those who gave the old formula using one cap salt, there are 48.4% of respondents who would make either ineffective or potentially harmful solutions. Evidently, continued education messages from all sources are still very necessary in order to achieve the goal of correct use of SSS.

Another campaign message advocated the making of a rehydration kit. Each homestead was asked to put together a litre bottle, a bottle cap, a spoon and cup and a supply of both sugar and salt; and to keep these items in a bag to be used when children had diarrhea. The national survey found less than three percent of their sample could produce the recommended kit. The PRICOR survey found 10.9% of the sample could produce a kit, and when only homesteads with children under 2.5 years are considered the proportion having a kit rises to 16.2%. All of the kits produced were examined and approximately half contained every recommended item. Such a significant increase in this tangible measure of the acceptance of ORT almost one year after the campaigns conclusion could be attributed to the teaching efforts of the RHMs.

2. Growth Monitoring

The Swaziland National Nutrition Status Survey conducted in 1983 showed that 30% of rural children under the age of 5 have retarded linear growth, or are "stunted" (20). For this reason, the Ministry of Health (MOH) is placing a greater emphasis on child growth monitoring and has developed a new child health card for recording weight for age readings as well as immunizations. At the suggestion of PHU officials, growth monitoring was included in the PRICOR field test objectives.

The two day refresher course was largely devoted to the topic of growth monitoring. Course content included the introduction of the concept of growth monitoring with instruction and practice of the skills needed to weigh, record and interpret the graph for mothers in the home setting. Guidelines were given for the course of action to take when a growth problem was identified. Time constraints forced the course to present nutritional advice only as a brief review. At the conclusion of the course the RHM trainers expressed the concern that sufficient time had not been available for supervised practice of weighing and plotting weights.

Throughout the course, the RHMs' response to growth monitoring was enthusiastic. They reported having often been questioned by mothers about the graph, but they had no idea of its use. While working in the clinic, RHMs many times were assigned the task of weighing children, but they never understood the purpose of the exercise.

At the conclusion of the course the RHMs were issued with portable hanging scales provided by UNICEF and a supply of the child growth cards which were replenished at regular intervals. They were instructed to issue growth cards and weigh children under 2 years old on the homesteads they visited.

Within 2 months of the completion of the refresher course a minimum of 4 homevisits were made with each RHM. The purpose of these homevisits was to assess the proficiency with which growth monitoring was being performed and to provide additional instruction if necessary. Below is a summary of observations made from these field visits.

1. All 8 RHMs were able to start a new growth card for child neatly and accurately.
2. Finding a place to hang the portable scale on the homestead was never a problem. There was always a tree, roof beam or grain storage structure which served the purpose.
3. Four of the eight RHMs needed to be reminded to zero the scale before weighing each child.
4. All 8 of the RHMs demonstrated the ability to read the scale accurately.
5. The most frequent area of instruction given involved plotting the weights. Only one of the RHMs was consistently unable to find the correct X and Y axis and plot the point. It should be noted that her formal educational level was below the group average.
6. Only one child over the age of one year was weighed by the RHMs. Older children tend to struggle and cry while in the pants sling of the scale and make the task very difficult.
7. All the RHMs were observed offering advice when the slope of the line was flat or descending. Referrals to the clinic and suggestions about nutrition were given. However, explanations and encouragement were not given when the slope was ascending.

8. Four of the RHMs weighed a child and noted the weight or stated they would remember it until they were home where they intended to write up the child growth card and bring it to the mother on the next visit.

The clinic nurse reported that she had been allowing the Ntondozi RHMs to weigh children and plot the weights when they worked in the clinic each month. Her observation was that all of them appeared to be proficient at the task.

In the field test evaluation survey, 64.9% of those homesteads with at least one child under 2.5 years old were able to produce a child growth card. Forty percent of those cards had two or more weights plotted on the graph. Taking into consideration that the MOH did not complete distribution of the new child growth cards to the rural clinics until 8 months prior to the survey, and that they envisioned clinics gradually phasing-in the cards, 64.9% becomes very impressive. This high card possession rate is most likely the direct consequence of the RHMs efforts during the field test phase.

Of the children in possession of a growth card, 75% had been weighed on the homestead by a RHM. In 4 instances a respondent indicated the RHM had weighed a child but no growth card was present.

Among the homesteads where a child was weighed, 85% of respondents reported that it was a useful service. When asked in what way the growth monitoring was useful, 63% stated that they were able to see if the child was growing well and 40% mentioned that fewer clinic visits were necessary. It is interesting to note that one of the respondents who claimed home weighing was not useful went on to explain that one weight could not tell her if her child was growing well.

There were 4 more respondents reporting that the RHM discussed how well a child was growing than reported the RHM weighing a child. The observed reluctance on the part of the RHMs to weigh older infants (1 year) may have led to their choosing to only offer advice in such instances.

5.3.4 Community Support Component

A. Community Organization Events

Two meetings were held in July, 1985 with Ntondozi's indvuna and his libandla in order to introduce the PRICOR field test and its objectives. These leaders agreed that Ntondozi would welcome such a project and they tentatively indicated that in-kind donations would be the most appropriate means of the community supporting the RHMs.

A general community meeting was held in September, and approximately 250 to 300 people from the community attended. Presentations introducing the PRICOR field test and its objectives were made. After two hours of discussion, the consensus was that the community would compensate the RHM, and in-kind donations was the most acceptable suggested method, but that there should be additional meetings held in order to consider the problem further.

In the month following this meeting, the RHMs were informed that a piece of land would be designated for them. They would be expected to provide the material inputs like seed, while the community would provide all the labor needed to produce a crop. The harvest could then be divided among the 8 RHMs.

A meeting was held in November with the indvuna and his libandla to confirm this reported plan and discuss details. During the meeting, it was explained by the indvuna that the community felt it was more appropriate to compensate the RHM with labor, since this was the form of contribution she made to the community and she was often forced to neglect her home as a result. Land had already been designated he said, and the community now wanted to hear from the RHMs about what crop they wanted to have planted. He was careful to point out that each RHM would be free to dispose of her portion of the crop as she chose. In this way, she could sell the produce and receive an indirect form of financial support from the community. The indvuna indicated that plans would be made to provide seed if the RHMs were unable to do so. A community meeting was scheduled for the following day where issues such as arrangements for plowing would be addressed.

The RHMs chose to plant either sugar beans or ground nuts. These crops are generally planted from mid-December until early February, with the important factor being that the rains must continue for several weeks after planting.

Another meeting was held with the indvuma and chief's runner (umgijimi) in mid-January to assess the progress the community was making towards implementing their agricultural labor support scheme. Assurances were given that a meeting would be held soon and action would be taken. When interviewers began visiting the homesteads selected to be part of the field test evaluation survey in mid-February, all questions concerning the agricultural labor scheme were phrased in the future tense because no work had been done.

In the first week of March a womens lilima (traditional community work party) was called and the land was prepared. A message was sent to all the RHMs that this was completed. Presently, the consensus among the RHMs seems to be that they do not wish to waste seed by planting now because the rainy season is over. They also expressed concern that any crop they might plant would be eaten by goats because their field lies unfenced in the middle of communal grazing lands.

It appears that the field will now lie fallow for the season. This may breed resentment among the community, especially those who worked to prepare the field. It could give the appearance that the RHMs are ungrateful for the community's efforts on their behalf. If these conclusions are reached by the community, the prospect of a lilima being formed to work the RHMs field in the future becomes very dim.

The indvuma's explanation for the delay in plowing the field was that he had been frequently absent from the community for long periods of time to attend to national traditional government matters. It was his responsibility to send word that a lilima must be formed, but he was away and unable to do this. When he returned, he had given the matter his attention.

B. Community Approval of RHM Support

The field test evaluation survey revealed that 79.7% of the people interviewed approved of the community giving support to the RHMs for their work, while 9.7% disapproved, and 10.9% were uncertain. There was no significant relationship found between approval of support and the perceived usefulness of the RHM visit, when the last RHM visit occurred or desire for more frequent RHM visits.

The respondents were asked why RHMs should receive community support. Table 14 summarizes the responses to this question.

TABLE 14

SUMMARY OF RESPONSES: REASONS FOR COMMUNITY SUPPORT

Reasons for support	Number	Percent
1. RHM is helpful; provides services	29	45.3
2. It will be the chief's/elders' decision	9	14.0
3. There is no decision yet	4	6.3
4. It is up to the community	4	6.3
5. Other: yes	7	10.9
6. Other: no	4	6.3
7. Not applicable/no answer	7	10.9

When the responses indicating the RHM is helpful are added with the "other: yes" category it appears that slightly over half of the sample cited a factor relating to RHM performance as the reason why the RHM should receive support. In a similar manner, when the answers relating to a "chief's/elders' decision" are aggregated with the "community" and "no" decision yet" categories, a 26% proportion results. This tendency to leave the decision to the larger community and its leadership was to appear again in relation to future RHM community support.

When RHMs were asked if they felt that the community was in favor of giving them any form of support, six of them said yes, the community would be in favor of supporting them because they do a good job. The two who said the community did not approve cited the fact that the RHMs were considered government workers. In both cases the fact that the community had not plowed the field was listed as the basis for this attitude.

The Ntandozi RHMs appear to be considerably more optimistic about community support than the national sample surveyed in 1984. In the national survey 50% (n = 31) of the RHMs said the community would be willing to provide in-kind support.

C. In-kind Donations

When the RHMs were asked whether they had received any in-kind donations, during the field test, 4 reported they had received donations. It is interesting to note that all 4 RHMs reporting in-kind donations live and work either adjacent to (under 10 minutes walk) or nearby (10-30 minutes walk) the chief's kraal. Those RHMs living far from the chief's kraal (greater than 30 minutes walk) had received no in-kind donations. This is understandable considering that all community directives originate from the chief's kraal, and homesteads in proximity to the kraal might be more responsive to the chief's edicts than those homesteads at a greater distance.

The survey population was asked if they had given the RHM any in-kind donations, and 23% of the homesteads indicated that they had given some form of in-kind donation to the RHM in the last six months. When these responses were analysed by individual RHM, seven of the eight were

reported to have received gifts. In this sample, there was no relationship found between in-kind donations and distance from the chief's kraal. The inconsistency between this response and the RHM's response to the question of receiving in-kind donations was explained when the type of donation was examined. The most commonly listed gift was "ordinary food" indicating that the RHM was given food to eat during the course of her visit. According to informants this is not really a donation; it's providing hospitality. An in-kind donation would be something that is taken home by the recipient. In this light, it appears that the RHMs don't consider these gifts of food to be in-kind donations.

The nature of in-kind donations was discussed in detail with informants, and they explained that gifts are given to a non-community member who comes from far away to visit. Someone who delivers services and comes from outside the community such as an Health Assistant or agricultural extension worker are typical recipients of in-kind donations. By delivering services comparable to these government workers the RHM is already cast as something unique within the community. In fact, by asking people to give the RHMs in-kind donations, it could create a role conflict with their status as community members.

D. Agricultural Labor Support Scheme

When asked if they were aware of the community's agricultural support scheme, 39.1% of the respondents said yes. When analysed by distance from the chief's kraal there was a slight inverse relationship between awareness of the support scheme and distance from the kraal. However, even among homesteads adjacent to the chief's kraal, awareness did not exceed 50%. This low rate of awareness may be accounted for by the fact that the community members had not yet been asked to actually work in the field.

People surveyed were also asked if they or any member of their homestead would contribute labor to the RHM support scheme. Fifty-six percent of the respondents indicated they would be willing to contribute

agriculture labor, while 25% said they would do so if asked by the chief. Combined, these percentages total to 51%, which is consistent with the 50% respondents who approve of community support for RHMs.

Survey respondents were asked why they would or would not contribute labor for the RHMs benefit. The answers are summarized by Table 15.

TABLE 15

SUMMARY OF RESPONSES TO QUESTION OF SUPPORTING RHM
WITH CONTRIBUTED LABOR

Response	Number	Percentage
Yes:		
RHM is helpful, provides important services	24	38.7
The community has an obligation to repay RHM	9	14.5
The RHM is overworked	6	9.7
Because chief commands it	4	6.4
Other	6	9.7
No:		
Personal circumstances do not permit it	10	16.2
Other		
Total	<u>3</u> 62	<u>4.8</u> 100.0

Table 15 shows that the community does perceive the RHM as making important contributions to the community. However, it is possible that such questions may elicit the response perceived as desirable to the interviewer.

In an attempt to elicit the RHMs candid opinions of the validity of the proposed support scheme, they were asked to detail its advantages and disadvantages. Six of the RHMs saw the potential of selling their portion of the harvest as advantageous, while two saw the crop as a good source of homestead food. Surprisingly, three RHMs looked forward to using the crop to supplement the diets of poor families within the community. Five RHMs also saw the proposed community crop production as a vehicle to reinforce the importance of their work in the eyes of the community.

Perceived disadvantages were more numerous. All but one RHM expressed concern that since the designated fields were far from any homestead the crop could easily be stolen. Two RHMs expressed the opinion that the community would not provide the labor. Logistic concerns such as lack of fencing, the distant location of the field, and the lack of water were mentioned.

Two RHMs also commented that some community members would be jealous of their receiving a community produced crop. This potential for ill-will towards the RHM seems unavoidable with any form of community support, but its potential psychological impact on the RHM can not be ignored.

The RHMs were asked if they would be willing to contribute seeds in the proposed support scheme, and all eight expressed a willingness, but one qualified her answer by saying she could not afford it.

E. Future Compensation for the RHM

The evaluation survey included a question about what ways the respondent felt that the community should compensate the RHMs in the future. The majority, 48% declined to offer a possible form of support,

but indicated that the community and/or its chief or elders would decide the matter. The currently proposed labor support scheme was mentioned by only 15% of the respondents. This frequently expressed preference to defer the support decision to the community leadership may indicate that the crucial component to the success or failure of any community support scheme for RHMs lies with these leaders.

The RHMs were asked whether they felt the community would make an effort to provide support for them after the conclusion of the field test. There were four positive answers, 3 negative ones, and one stated she was unable to say. When asked to explain their answer, all four RHMs who felt there would be future efforts indicated that this would happen because the indvuna was supportive. The three RHMs who predicted no future efforts would be made indicated that the community was simply not interested in supporting them.

F. Another Example: the Mahlangatsha Experience

The Mankayane Nurse Supervisor, who was involved in all of the community organization efforts made in Ntondoni as part of the PRICOR project field test became an enthusiastic proponent of community support for RHMs. She translated her enthusiasm into action by taking the agricultural labor support scheme to Mahlangatsha, another Inkhundla (traditional administrative district). The Mahlangatsha Inkhundla is comprised of six chieftaincies and headed by an administrative official, (indvuna yenkhundla). Twenty-three RHMs work within the district. The Nurse Supervisor presented the support scheme at an Inkhundla meeting and the chiefs agreed that such a scheme to support the RHMs should be implemented in Mahlangatsha. A large plot of land was designated, and the indvuna yenkhundla, along with the Mankayane Nurse Supervisor, arranged for tractor time to be donated by the local rural development area (RDA). When the land was plowed the indvuna yenkhundla donated manure, which was applied to the field. One of the participating chiefs donated a tin of bean seed to the project. All of this preparation took place in January.

The month of February saw no further progress made because the chiefs and indvuna yenkhumdla were called away to perform national responsibilities relating to the upcoming coronation of the Crown Prince in April. At this writing, the field has not been planted because no traditional leader has been available to call the lilima (traditional community work party).

In the case of Mahlangatsha, the support scheme was initiated and actively encouraged by a single individual. It was eventually brought to a standstill by the same constraint that effected Ntondozi, namely the physical absence of the essential individual, the traditional community leader.

5.3.6 Summary

At the conclusion of the solution development phase, selection criteria for the field test site were developed which included the existence of a health committee and a traditional community leader, local clinic nurse and district Nurse Supervisor who were supportive of the project goals. A single chieftaincy was identified which met these criteria. The field test was then conducted in the identified community over a period of 6,5 months.

Objectives of the field test were twofold. The first was to redirect RHMs activities by reinforcing PHC skills, specifically immunization and ORT information. In addition, growth monitoring was introduced and the 8 field test RHMs were trained and equipped to perform growth monitoring on the homestead. The second objective was to pilot a community based support scheme for RHMs. The field test community was to decide on the most appropriate form of prepayment scheme to pilot.

The field test was initiated through a series of meetings with traditional community leaders, a general community meeting and a two day refresher course for the RHMs. For the duration of the field test period the researcher monitored RHM performance by monthly meetings with the RHMs and homevisits to assess their proficiency at growth monitoring. To evaluate the outcome of the field test, a survey of the study community and interviews with the RHMs and community leaders were conducted.

A. PHC Skills Component

The evaluation survey indicated that the immunization status of children in the field test community was consistent with national averages at the conclusion of the field test. However, a referral slip used by RHMs and collected at the clinic gave the indication that there was good compliance by mothers when the RHM referred a child to the clinic for immunizations.

Survey results indicated that the RHM was the primary source of information concerning ORT in the community. Of the field test area respondents, 35% could give the correct formula for making sugar-salt solution to be used in response to infant diarrhea. This was a significant improvement over the 21% who could give the current formula on a national survey conducted in 1985. Field test homesteads also had approximately 50% more oral rehydration kits than those respondents in the 1985 national survey.

The introduction of growth monitoring into the sphere of RHM activities was well received by both the community and the RHMs themselves. In spite of a training period on growth monitoring which was later judged as insufficient by the instructors, 7 of the 8 RHMs proved to be proficient and accurate at weighing infants on the homesteads and plotting on the growth card.

The MOH completed distribution of a new child growth card 1 month prior to the field tests inception. Field test RHMs were taught to issue the new child growth cards and given a supply at the end of training session. Among the homesteads surveyed with a child under 2.5 years, 64% were in possession of the new child growth card. This high card possession rate is most likely attributable to the activity of the RHMs. Of those homesteads where a new child growth card was present, 75% reported that the RHM had weighed an infant on the homestead. The overwhelming majority (85%) of those reporting a home weighing considered the service useful. Thus it appears that the field test RHMs were both proficient and quite active in carrying out growth monitoring on the homestead level.

B. Community Support Component

The field test community considered several methods of prepayment as a means for supporting the RHMs. Financial contributions were immediately ruled out by community members because of a lack of disposable income. In-kind donations were considered, but the community did not see this as a satisfactory answer. Evaluation survey results indicated that there was a potential for social role conflicts with this method because in-kind donations are not generally given to fellow community members.

Eventually, a plan was devised where communal land was designated and the community proposed to provide all the labor inputs towards producing a crop for the RHMs. Material inputs such as seed were to be provided by the RHMs. The community agreed that the RHMs could sell the resulting crop and thus receive financial support indirectly.

This support plan did not achieve fruition. The designated land was prepared by communal labor late in the growing season and the RHMs were not inclined to invest seed in the project. Other considerations such as lack of fencing to protect the crop from grazing animals made them reluctant to invest inputs.

The traditional community leader (Indvuna in the case of the field test) is the one person who has the authority to call on people to perform civic duties, such as the preparation of land for the RHM support scheme. This individual also has many responsibilities to fulfill on both local and national levels. During the optimum period for planting, the indvuna was away from the community fulfilling his own national civic responsibilities. This absence appears to have contributed significantly to the failure of the pilot support scheme.

It should be noted here that the traditional community leader's national obligations pertained to the preparations being made for the coronation of Swaziland's Crown Prince. Thus, the same demands are not likely to be placed on him in future years.

Evaluation survey results are encouraging however. Over 70% of those interviewed approved of community support for RHMs, and 75% of the RHMs saw the community as willing to support them. Over 80% of the respondents indicated they would willingly donate agricultural labor towards supporting the RHM.

Approximately half of the people surveyed about future compensation for the RHM indicated that it would be up to the community or traditional leaders to decide. This response indicates a willingness on the part of the community members to leave decisions defining civic duties to the traditional leaders. It could also be inferred that they would perform the tasks delineated by those leaders. Half of the RHMs indicated that they felt there would be future efforts to support them because the indvuna (traditional community leader) wanted them to receive community compensation. All these findings indicate that a community based support scheme in the field test area may yet be completely actualized.

C. RHM Performance

Various aspects of the RHMs performance were investigated as part of the evaluation survey. Findings indicated that the field test area RHMs were making visits in intervals consistent with their job description. Survey respondents indicated the RHMs visit was useful in 80% of the cases. When asked about the perceived utility, 30% of the respondents mentioned the RHMs curative functions as being useful.

No shift of RHM activities was perceived by the community after the refresher course on PHC skills was given to the RHMs. However, six of the eight RHMs reported that since the field tests inception more people were coming to them for assistance with problems concerning child health. This observation suggests that the impact of the refresher course may have been to broaden the community's perception of the RHMs role in relation to childrens health.

Job satisfaction questions revealed that RHMs are gratified by having people respond to their teachings, and appreciate the opportunity to learn new things. However, half of the RHMs indicated that their husbands objected to their work as an RHM.

6. CONCLUSIONS AND RECOMMENDATIONS

The redirection of RHM activities was successful to the extent that children's health problems were more frequently referred to the RHM at the field tests conclusion. The introduction of growth monitoring on the homesteads by RHMs was very well received. The researcher would make the following recommendations concerning the redirection of RHM activities.

1. Curriculum should be developed to introduce the theory and practice of growth monitoring to RHMs. This curriculum should include:
 - a. Translation of the newly released "Swaziland Child Nutrition Guidelines" into SiSwati for use by the RHMs. Separate flyers of the chart "When a Child Does Not Grow Well" should be prepared in SiSwati to be used as a source of reference for age specific appropriate nutritional messages to be given in response to faltering growth (see appendix 4).
 - b. Editing and translation of other recently developed materials such as "Key Results of the Swaziland National Nutrition Status Survey" and "How to Use the Child Health Card" into SiSwati to make them appropriate for additional training and inservice materials.
2. Develop protocols specifically for RHM use in growth monitoring. These should include criteria for assessing whether a child with faltering growth should be referred for further assessment and treatment, and clearly delineated referral sites such as the local clinic or regional hospital.

3. A training course should be offered to currently practicing RHMs using the curriculum developed to introduce growth monitoring. This should be no less than a 3 day intensive course including:
 - a. A practical focus with repetition in sequence of the skills involved in growth monitoring by individual RHMs.
 - b. Stress should be placed on the interdependence of all the steps to growth monitoring, i.e. records are of little use without weights, weights are of little use without a record and a complete record is of no value until the mother knows what it means and what actions she can take to improve growth.
 - c. The local rural clinic nurse should be recruited and actively involved in these training sessions.
 - d. Portable hanging scales and a supply of child growth cards should be issued to the RHMs at the conclusion of the course.

4. The growth monitoring training for RHMs should be followed up by:
 - a. The local rural clinic nurse involved in the training should provide supervision of proficiency when RHMs perform growth monitoring in the clinic. She could then offer additional instruction and further supervised practice tailored to the individual RHM's needs.
 - b. Semi-annual in-service sessions should be held to reinforce previously presented material and introduce additional nutritional messages.

5. RHM in-service training schedules should be revised so as to emphasize the PHC skills of immunizations and ORT.

The field test community designed a method of supporting the RHM which involved the donation of communal land and agricultural labor inputs to produce a crop for the RHMs. Material inputs such as seed were to be provided by the RHMs. The community agreed the RHMs could sell the resulting crop. This latter option would thus provide an indirect form of financial support from the community.

This scheme did not reach fruition during the time the field test was being conducted. The designated land was not prepared for planting until very late in the planting period and as a result the RHMs appeared to be unwilling to contribute seed. The field was not prepared in a timely manner because the traditional community leader was away performing his own national civic obligations during the period in question. This individual's edict appears to be an essential component to the community organizing to perform civic responsibilities.

In light of the field test experience, the researcher recommends the following actions be taken to encourage community participation and support for the RHMs:

1. Future efforts should not actively promote in-kind or in-cash contributions by individual homesteads as the sole basis of community support for RHMs. The field test community generally approved of the concept of community support for RHMs. They were however, reticent to accomplish this by means of in-kind or in-cash donations.
2. In the light of RHM responses to the question of job satisfaction, it appears that a substantial number of the RHMs' husbands object to their work. Given this finding, greater efforts should be made to make spouses more aware of RHM activities and contributions to the community. This could be done by involving spouses in training and in-

service sessions, as well as community meetings which deal with the RHM. PHU representatives could play an active role in accomplishing this.

3. Traditional community leaders were identified as pivotal individuals in any community based effort to sustain the RHMs. Both quantitative and qualitative results point strongly to the necessity of not merely approval but active participation in any RHM support scheme by these individuals.

Given that their participation is essential, the recommended course of action would be to hold seminars for traditional community leaders to sensitize them to the contributions an RHM makes to the community, her role in the delivery of primary health care, and the need for community involvement to facilitate and maximize that role. These seminars could be organized separately or in conjunction with other development orientation seminars for traditional leaders. Only after such seminars have been held should further efforts to establish community based support schemes be pursued.

7. ADMINISTRATIVE

There were a number of changes in staffing on this project over its two year duration. Maggie Makhubu, one of the two original co-investigators was promoted to Chief Nursing Officer shortly after the projects inception. The responsibilities of her new position made it necessary for her to resign from the PRICOR project, but she continued to be involved as a decision maker and administrator. Bertha Dlamini Vilakati replaced Maggie Makhubu as co-investigator.

At the end of the solution development phase Cathy Connolly, the other co-investigator was to leave the project. Her replacement was Laurie Dunn.

During the course of the project, timely input and assistance on an administrative level was received from Edith Ntiwane, Matron of Public Health and Sister Elisabeth Tenteleni Mndzebele, Coordinator of the RHM program. On the local level, Nurse Supervisor Thandie Nxumalo was of great assistance in conducting the field test. Staff Nurse Beatrice Dlamini and Health Assistant Frederick Mzima also assisted in implementing the field test phase.

The Social Science Research Unit of the University of Swaziland conducted this project in collaboration with the Ministry of Health.

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Appendix 1

EXISTING JOB DESCRIPTION FOR RURAL HEALTH MOTIVATORS

1. Identify and solve problems in the community
2. Motivate, teach, organize and follow-up the community
3. Teach, motivate and assist in maternal and child health
4. Motivate, assist and refer for family planning
5. Assist in emergency home deliveries
6. Teach, motivate and assist the community in agriculture, home economics and nutrition
7. Teach, motivate, assist and organize the community to promote environmental sanitation
8. Identify, teach, prevent and refer communicable diseases
9. Identify, teach, prevent and refer mental illness
10. Teach and promote mental health
11. Promote adult literacy
12. Promote community participation in community development
13. Identify resources and collaborate with extension workers.

Appendix 2

ENVIRONMENTAL FACTORS

	Expectations & Role of the Community	Expectations & Role of the RHM	Sustainability	Community Involvement	Expectations & Role of the MOH
I. GEOGRAPHIC/DEMOGRAPHIC					
climate/topography				x	
spatial distribution of population		x		x	
age distribution	x	x		x	
household size	x	x	x		
II. GENERAL INFRASTRUCTURE					
communication systems (physical/social)			x	x	
transportation patterns	x	x	x	x	

III. HEALTH STATUS FACTORS

	Expectations & Role of the Community	Expectations & Role of the RHM	Sustainability	Community Involvement	Expectations & Role of the MOH
mortality/morbidity	x	x	x		x
nutritional status	x	x			x
frequency and severity of sickness episodes	x	x			x

IV. CULTURAL FACTORS

religious/folk beliefs in relation to health	x	x		x	
role/utilization of traditional healers	x			x	
attitudes toward authority/government	x		x	x	x
attitudes toward participation in unfamiliar activities	x		x	x	
preferences for different types of health services (drug vs preventive; physician vs auxiliary, contemporary vs traditional)	x	x	x		
willingness to pay for modestly trained CHWS			x	x	

V. SOCIAL FACTORS

communitarian factors				x	
role of women and children in home, in production, in health	x	x		x	
urban rural life styles			x	x	
populations in transition				x	
educational levels	x	x		x	
concepts of property and property rights				x	
social organization of the community	x		x	x	
literacy levels	x		x	x	

VI. ECONOMIC FACTORS

	Expectations & Role of the Community	Expectations & Role of the RHM	Sustainability	Community Involvement	Expectations & Role of the MOH
income distribution: rural/urban			x		
personal expenditure for health	x		x		
occupational patterns			x		
economic interdependencies	x				
financing patterns: social security	x		x		
spatial and social distribution of resources	x		x		
value of perceived benefits in relation to perceived costs	x		x	x	
income per capita				x	
total community resources				x	
seasonality of production				x	
willingness to pay for preventive services	x		x	x	
VII. HEALTH SECTOR ORGANIZATION					
public vs private	x			x	x
degree of control over health sector economy					x
professional organizations: sector making roles				x	x
attitudes toward PHC and CHW	x			x	x
facilities: locations & services	x				x
content of PHC health services	x				x
types of providers (organizations, individuals)	x				x
utilization of health services and commodities	x				x
costs of health services and commodities	x				x

VIII. POLITICAL OR ADMINISTRATIVE/
BUREAUCRATIC FACTORS

	Expectations & Role of the Community	Expectations & Role of the RHM	Sustainability	Community Involvement	Expectations & Role of the MOH
role of government				x	x
economic distribution policies	x				x
social development priorities					x
centralization/decentralization balance					x
planning/decision processes					x
articulation of health policy					x
administrative systems -- stage of development					x
state of planning and management processes					x
managerial roles and incumbencies					x
intersectorial co-ordination					x
patterns of government spending and community spending	x				x
external donor financing					
patterns and roles of community leadership	x		x	x	
alternative claims of productive resources of the community (priority given social devel vs economic or defence)	x		x	x	x
political expectations regarding provision of health services	x	x			x
constraints placed by donor agencies			x		x
community organizations that can be involved in CHW program development and support				x	
functions of the community as recipient of services vs participant/contributor	x		x	x	

Appendix 3

ENVIRONMENTAL FACTORS

	Literature	Homestead	Chief	RHM	Other Community Workers
I. GEOGRAPHIC/DEMOGRAPHIC					
climate/topography	x				
spatial distribution of population	x				
age distribution	x				
household size	x				
II. GENERAL INFRASTRUCTURE					
communication systems (physical/social)	x				
transportation patterns	x	x			
III. HEALTH STATUS FACTORS					
mortality/morbidity	x	x			
nutritional status	x				
frequency and severity of sickness episodes		x			
IV. CULTURAL FACTORS					
religious/folk beliefs in relation to health	x				
role/utilization of traditional healers	x				
attitudes toward authority/government	x	x	x	x	x
attitudes toward participation in unfamiliar activities	x	x	x	x	x
preferences for different types of health services (drug vs preventive; physician vs auxiliary, contemporary vs traditional)		x			
willingness to pay for modestly trained CHWs	x	x	x	x	x

	Literature Review	Homestead	Chief	RHM	Other Community Workers
V. SOCIAL FACTORS					
communitarian factors	x				
role of women and children in home, in production, in health	x				
urban/rural life styles	x				
populations in transition	x	x			
educational levels	x				
concepts of property and property rights	x				
social organization of the community	x				
literacy levels	x				
VI. ECONOMIC FACTORS					
income distribution: rural/urban	x				
personal expenditure for health		x			
occupational patterns	x				
economic interdependencies	x				
financing patterns: social security	x				
spatial and social distribution of resources.	x				
value of perceived benefits in relation to perceived costs		x	x	x	x
income per capita	x				
total community resources	x				
seasonality of production	x	x	x	x	x
willingness to pay for preventive services		x	x	x	x
VII. HEALTH SECTOR ORGANIZATION					
public vs private	x	x			
degree of control over health sector economy	x				

	Literature Review	Homestead	Chief	RHM	Other Community Workers
professional organizations: sector making roles	x				
attitudes toward PHC and CHW	x				
facilities: locations & services	x	x	x	x	x
content of PHC health services	x				
types of providers (organizations, individuals)	x				
utilization of health services and commodities		x			
costs of health services and commodities	x	x			
VII. POLITICAL OR ADMINISTRATIVE/ BUREAUCRATIC FACTORS					
role of government	x	x	x	x	x
economic distribution policies	x				
social development priorities	x				
centralization/decentralization balance	x				
planning/decision processes	x				
articulation of health policy	x				
administrative systems -- stage of development	x				
state of planning and management processes	x				
managerial roles and incumbencies	x				
intersectorial co-ordination	x				
patterns of government spending and community spending	x				
external donor financing	x				
patterns and roles of community leadership	x				
alternative claims of productive resources of the community (priority given social devel vs economic or defence)	x				

	Literature	Homestead	Chief	RHM	Other Community Workers
political expectations regarding provision of health services	x	x	x	x	x
constraints placed by donor agencies	x				
community organizations that can be involved in CHW program development and support	x	x	x	x	x
functions of the community as recipient of services vs participant/contributor	x	x	x	x	x

Appendix 4

When A Child Does Not Grow Well		
AGE	GROWTH CHART SHOWS	RECOMMENDATIONS
0 to 3 Months	No Weight Gain for One Month	Breastfeed 3 to 5 times more every day
	No Weight Gain for Two Months	Mother should eat an additional two dishes of food every day
4 to 6 Months	No Weight Gain for One Month	Feed child one cup of energy rich porridge three times a day and breastfeed
	No Weight Gain for Two Months	Feed child one cup of energy rich porridge five times a day and continue to breastfeed.
7 to 12 Months	No Weight Gain for One Month	As above and give most of family food twice a day and breastfeed
	No Weight Gain for Two Months	Same as above and add snacks to diet
13 to 24 Months	No Weight Gain for One Month	Feed adult food five times a day Keep breastfeeding
	No Weight Gain for Two Months	Increase variety of foods. Give child things he likes
24 Months and Older	No Weight Gain for One Months	Child should eat half as much food as his father.
	No Weight Gain for Two Months	Child should be encouraged to eat with other children.

